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The project was designed to investigate and demonstrate the ways by which students of nursing and personnel in hospital nursing services can be prepared to cope with disaster problems as well as additional activities that impinge on medical practice. The demonstration projects were made possible through subcontracts with four institutions which indicated to the National League for Nursing their interest in developing disaster nursing content for their nursing programs. Essential content and suggested methods were identified by the Project Conference Group, and each institution provided for the preparation of its own faculty. The programs of Massachusetts General Hospital School of Nursing, University of Minnesota School of Nursing, Skidmore College Department of Nursing, Columbia University Teachers College Department of Nursing Education, and the nursing service of the Massachusetts General Hospital are described in detail. The National League for Nursing comprehensive achievement test in disaster nursing is explained and the results of its use in a study of students with and without disaster nursing instruction is reported. (JK)

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DISASTER NURSING PREPARATION

Report of a Pilot Project Conducted in Four Schools of Nursing and One Hospital Nursing Service

Prepared by

Mary V. Neal

NATIONAL LEAGUE FOR NURSING
1963

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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DISASTER NURSING PREPARATION

Report of a Pilot Project Conducted in Four Schools of Nursing and One Hospital Nursing Service

Sponsored by National League for Nursing
Under Contract to Federal Civil Defense Agency
(Now Department of Defense, Office of Civil Defense)

Prepared by 2

Mary V. Neal

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NATURE AND PURPOSE OF THE PROJECT

This is the report of a study undertaken by the National League for Nursing that was aimed at improving the preparation of nurses for the functions they are expected to assume during disasters. The study was financed through a contract with the Federal Civil Defense Administration (now the Department of Defense, Office of Civil Defense) and was in effect from January 27, 1958, to September 6, 1961.

Disaster situations present unusual and challenging problems to society and particularly to nursing. The scope of the problem that affects society is clearly stated by Anthony Wallace:

> Situations involving the threat of, or experience of, an interruption of normally effective procedures for reducing tensions, together with a dramatic increase in tensions, to the point of causing death or major personal or social readjustment may be called "extreme situations." Such extreme situations, especially when they involve injury or death, are often called disasters.[1]

This statement helps to focus the problem encountered by nurses in times of disaster. When translated into nursing terms, the problem becomes one of an interruption of planned nursing service in existing institutions, agencies, and homes by a sudden intrusion of great numbers of sick and injured and the use of shelters and other structures for disaster victims. The problem requires that nurses:

1. Organize under chaotic conditions.
2. Manage large wards with little or no professional assistance.
3. Utilize volunteer help, both trained and untrained.
4. Adapt and develop nursing care procedures to meet the demands of a disaster situation.
5. Adapt and develop public health nursing functions to meet the demands of the situation.[2]

In addition to these demands for nursing, which are within the realm of nursing practice, the American Nurses' Association and the American Medical Association are in agreement that in a disaster, if physicians are not available, nurses will assume activities currently within the realm of medical practice, that is, the management of normal deliveries, the management of the psychologically disturbed, and the diagnosis and treatment of minor illnesses and injuries.

The NLN, whose purposes are the improvement of nursing services and nursing education, recognized its obligation to help nursing services and educational programs in nursing to prepare nurses who could meet these demands. This belief led to the appointment of the NLN Committee on Nursing Service and Education in National Defense in 1954. This committee formulated the original plans for the project and participated in its ongoing development.

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[1] Anthony F. Wallace. Human Behavior in Extreme Situations, Disaster Study Number 1, Publication 390, National Academy of Sciences, Washington, D.C., National Research Council, 1956, p. 1.

[2] NLN-FCDA Prime Contract.

PURPOSE AND GENERAL METHOD

The project was designed to investigate and demonstrate the ways by which students of nursing and personnel in hospital nursing services can be prepared to cope with these five disaster nursing problems and those additional activities that impinge on medical practice.

The major approach to the achievement of this purpose was through studies conducted in a hospital nursing service and in educational programs of various types--practical nursing, diploma, baccalaureate degree, and graduate. In addition, a survey was made of the extent to which preparation for disaster nursing was currently being offered by educational programs in nursing throughout the country. A related activity, recommended by the NLN Committee on Nursing Service and Education in National Defense, was the construction of an achievement test in disaster nursing by the NLN Test Construction Unit.

PARTICIPANTS

The demonstration studies were made possible through subcontracts with four institutions that were desirous of developing disaster nursing content for their nursing programs and that had indicated their interest in the NLN project. These four institutions and the programs in which the studies were carried out were:

Massachusetts General Hospital--diploma program and hospital nursing service.

University of Minnesota--practical nursing program and basic baccalaureate degree program.

Skidmore College--basic baccalaureate degree program.

Teachers College, Columbia University--baccalaureate degree program for registered nurses and graduate programs.

Mary V. Neal served as NLN director of the entire project throughout its duration. Catherine M. Sullivan, nurse consultant, OCDM, served as liaison between the OCDM and the NLN. The NLN Committee on Nursing Service and Education in National Defense was the advisory committee to the project.

The activities in each of the participating institutions were guided by one or more project directors. In view of the importance of the project, the Army Nurse Corps lent the services of three nurse officers to serve as project directors for a period of 12 months, in 1958 and 1959, in Massachusetts General Hospital, the University of Minnesota, and Teachers College, Columbia University. From 1959 until the completion of the study, the responsibility for project direction in each of these three institutions was delegated to one or more of its staff members. Skidmore College appointed one of its faculty members to direct its study for the entire duration of the project.

Although it was agreed from the beginning that each participating institution would develop its portion of the study according to its own philosophy, the need for continuing communication about common problems was felt. Accordingly, a Project Conference Group, consisting of the administrators and project directors of the participating programs, the members of the NLN Committee on Nursing Service and Education in National Defense, and the NLN project director, met at intervals throughout the duration of the project to plan its over-all development.

LENGTH OF THE PROJECT

According to the original plans, the study was to extend over a period of 18 months. By the beginning of 1959, the Project Conference Group concluded that this period would not be adequate for involving the leadership personnel in the programs participating in the study and preparing them for their roles, for exploring and revising curriculum content and organization, and for evaluating results. Accordingly, the NLN Committee on Nursing Service and Education in National Defense recommended to the NLN Board of Directors that additional funds be obtained for extending the study long enough so that the plan of instruction devised by each participating program could be implemented and subsequently evaluated. The OCDM made available the additional funds that were needed for this extension.

Teachers College completed its portion of the study in September, 1960. The three other institutions continued their studies until September, 1961.

REPORTS OF FINDINGS

By agreement, the plan by which each program reported progress included identification of the problem, formulation of the objectives, description of the methods and techniques, evaluation of the results, and formulation of conclusions and recommendations. In keeping with the prerogatives of the participating institutions, each one selected its own means of conducting the study.

This report presents a summary of the activities undertaken by the Project Conference Group and by the individual participating institutions. It is hoped that it will be of use to educational programs in nursing and to nursing services that are endeavoring to prepare their students or staff members for functioning in a disaster situation. However, all those involved in the study caution against any assumption that the report is a final or an authoritative document. They wish to emphasize their opinion that the experience in any one program cannot and should not be duplicated exactly in any other program. They do believe that their experiences may suggest ideas to, or corroborate the ideas of, others engaged in disaster nursing preparation. It is in keeping with this belief that this report has been prepared.

CONCLUSIONS

1. Nursing functions essential for optimum care that is directed toward the preservation or maintenance of life during a disaster have not been identified.

2. A basic educational program in nursing can include preparation in only the fundamental knowledge and skills essential for effective functioning by nurses in a disaster situation.

3. Disaster nursing is not a clinical specialty.

4. Disaster nursing instruction may be included within the usual nursing courses, or may be given as a special course.

5. Clinical laboratory settings for learning experiences in disaster nursing are limited to the setting of the everyday practice of nursing.

6. At the present time, faculty members in schools of nursing have limited preparation for teaching disaster nursing.

7. Courses for teacher preparation in disaster nursing are almost nonexistent.

8. The inservice program is one effective means of preparing nursing instructors in disaster nursing.

9. Not all faculty members have the same interest in the development of disaster nursing content.

10. Students in nursing are inadequately informed about national and world affairs that have direct implications for national security and indirectly for disaster nursing.

11. Faculty study and action concerning disaster nursing results in a strengthening of the total curriculum.

RECOMMENDATIONS

1. That interdisciplinary research be undertaken (a) to determine the functions that every nurse must be able to perform in order to give optimum care in a mass disaster, and (b) to define the body of knowledge essential for the performance of these functions.

2. That, as a temporary measure, a center for teacher-training for mass disaster nursing be established under university auspices and be provided with funds, equipment, and facilities to prepare teachers in undergraduate and graduate educational programs in nursing, and that such a center have access to military training resources or the Civil Defense Instructor Training Center.

3. That short courses, conferences, institutes, or workshops relating to nursing in a mass disaster be offered under the auspices of universities or the national nursing organizations or both.

4. That faculty members in educational programs in nursing and administrative personnel in nursing services attend special courses in disaster nursing prior to the establishment of disaster nursing instructional plans in their programs or services.

5. That faculty inservice programs be developed as one feasible means of preparing faculty in disaster nursing concepts.

6. That disaster nursing instruction be included in all educational programs in nursing.

7. That nursing services develop workable disaster nursing preparedness plans.

8. That nursing services provide instruction in disaster nursing for their personnel.

9. That college and university educational units in nursing offer refresher courses in clinical nursing for nurses who need to improve their competence in general nursing as a basis for learning how to function adequately in a disaster.

CURRENT STATUS OF DISASTER NURSING PREPARATION

In August, 1958, a questionnaire was sent to all known educational programs in nursing to learn:

1. Whether or not disaster nursing instruction over and beyond a first aid course was being offered. (Disaster nursing, as conceived by the advisory committee, encompasses nursing activities that are carried out by a nurse and that are separate and apart from those that would be termed first aid and could be performed by a lay person.)
2. Whether or not instruction included consideration of specific problems encountered in disasters.
3. What disaster nursing preparation the faculty members had had.
4. Whether or not the program would be willing to share its plan of disaster nursing instruction with the NLN project.

Of the 1,793 questionnaires sent, 1,217 (about two-thirds) were returned by December 15, 1958. Eleven of these programs had been discontinued, and 12 returned the questionnaire after tabulations had been completed. The distribution of the 1,194 included in the study by type of program is indicated in Table 1.

Table 1. Number of Questionnaires Mailed and Number of Returned Questionnaires Tabulated

Type of Program	Questionnaires Mailed	Questionnaires Tabulated	
		Number	Percent
Practical nursing	517	345	67
Associate degree	38	30	79
Diploma	944	670	71
Baccalaureate basic	171	117	68
Graduate nurse (baccalaureate and higher)	123	32	26
Total	1793	1194	67

FINDINGS OF THE QUESTIONNAIRE STUDY

Of these 1,194 programs, the number reporting that they offered preparation in disaster nursing amounted to 53 percent. This percentage varied considerably when data from each type of program were examined. In general, the longer the curriculum, the greater the likelihood that disaster nursing instruction was included (Figure 1).

Figure 1. Percentage of 1194 Programs That Reported Teaching Disaster Nursing

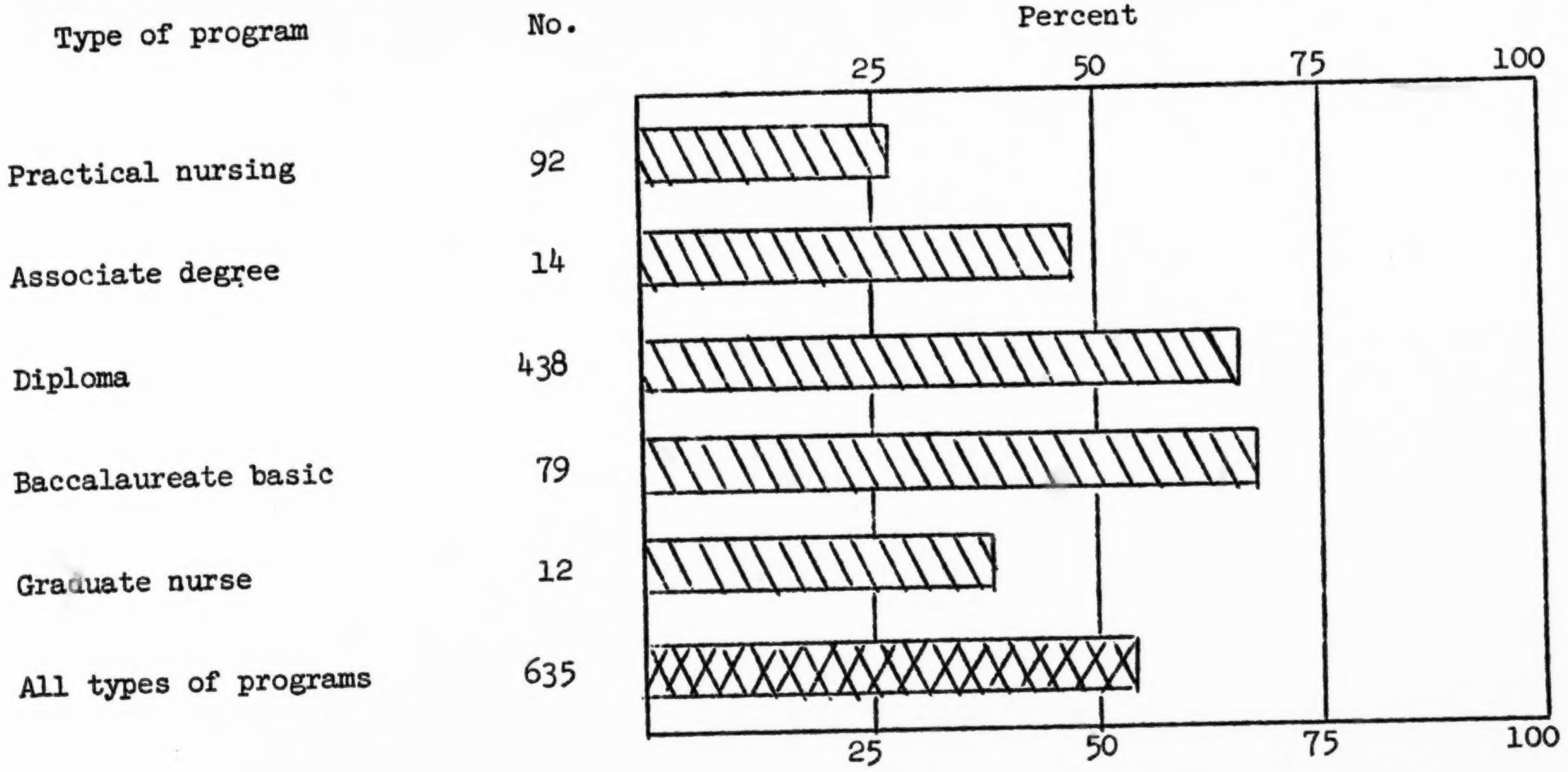

Table 2. Percentage of Programs that Reported Giving Instruction Pertaining to the Seven Major Disaster Nursing Problems

Disaster Nursing Problems	1194 Programs	345 Practical Nursing Programs	30 Associate Degree Programs	670 Diploma Programs	117 Baccalaureate Programs	32 Graduate Nurse Programs
Managing large wards under chaotic conditions	36	16	40	45	38	22
Teaching and utilizing trained and untrained volunteers	36	14	37	44	51	56
Utilizing clinical judgment to determine priority of nursing care in disaster situation	48	19	40	62	53	34
Giving care in absence of commonly used and accepted utilities and materials (no electricity, unsafe drinking water, etc.)	55	41	54	62	58	44
Considering disaster public health problems which affect nursing (crowded living conditions, communicable diseases, etc.)	56	39	54	63	65	62
Simplifying nursing procedures	61	50	57	66	70	47
Rendering minimal lifesaving care	67	51	63	76	69	41

Table 2 indicates the percentage of programs that were helping their students to develop abilities for meeting the problems that had been identified by the NLN advisory committee as the major ones encountered by nurses in disaster situations. An analysis of the data in this table reveals several points that might be subject to speculation.

The objectives of most basic programs in nursing do not include the development of managerial skills; yet 36 percent of the programs reported teaching the management of large wards under chaotic conditions. An ascending percentage is shown for instruction that included the teaching and utilization of trained and untrained personnel--from 14 percent for practical nursing programs to 56 percent for graduate nurse programs.

Only 48 percent of the programs reported that they aim to help students to develop clinical judgments for determining priorities in nursing care, and 55 percent indicated that they offer instruction in nursing care in the absence of commonly used materials and utilities. In view of these percentages, it might be questioned whether many schools give preparation for safe practice of nursing in times of disaster.

Practical nursing, associate degree, and diploma programs ordinarily provide no instruction in public health nursing. The percentages relating to the offering of instruction in public health nursing problems may be questioned.

The percentage of programs teaching simplification of nursing procedures (61 percent) and rendering minimal lifesaving nursing care (67 percent) would seem to indicate that instruction in these two areas can be accomplished without too much difficulty.

Table 3, which presents data on the preparation of faculty members, shows that many programs have faculty members who have had some type of preparation for the teaching of disaster nursing. The percentage attending courses offered by universities, the United States Public Health Service, and other organizations seems to indicate that faculty members are attempting to obtain preparation in disaster nursing.

Over 40 percent of the nursing services in which students receive clinical experience were providing inservice programs in disaster nursing for their personnel, while less than 30 percent of the schools were providing inservice programs of this type for their faculty members.

The last question asked of the programs was, "Would you be willing to submit your plan of disaster nursing instruction to members of the NLN pilot project?" Several programs submitted their plans without any further request. Thirty-one programs stated that their disaster nursing instructional plans were currently being revised and would be made available to the project upon their completion. Forty-one stated that if they had plans, they would be willing to submit them, and 393 programs offered their plans for disaster nursing instruction as they then existed. The project conference group reviewed many of the instructional plans and found them helpful in the development of the study.

Table 3. Percentage of Programs in Which One or More Faculty Members Had Had Preparation in Disaster Nursing

Type of Preparation	1194 Programs		345 Practical Nursing Programs		30 Associate Degree Programs		670 Diploma Programs		117 Baccalaureate Degree Programs		32 Graduate Nurse Programs	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Had disaster nursing experience as a nurse	289	24	53	15	10	33	181	27	31	26	14	43
Attended a military Mass Casualty Course	305	26	45	13	12	40	184	27	52	44	12	38
Attended courses offered by USPHS, universities, and other organizations	548	47	93	27	19	63	345	51	70	60	21	69
Faculty inservice program	300	25	48	18	6	20	223	33	19	16	4	13
One or more of above means of preparation	804	67	150	43	23	77	509	76	95	81	27	34
Two or more of above means of preparation	506	42	67	20	15	50	310	46	57	49	18	56

QUESTIONS ARISING FROM FINDINGS

The data from the questionnaire survey give rise to several questions:

1. Is it realistic to believe that adequate concepts of disaster nursing can be taught in a one-year program--that is, a program in practical nursing? (Many practical nursing programs added this question at the end of the questionnaire.)

2. Can disaster nursing concepts relating to public health nursing problems be realistically taught if no actual experience in public health nursing can be provided?

3. Should schools be encouraged to include teaching of managerial skills in their objectives in the light of the disaster nursing needs?

4. Can the skills needed for the teaching of volunteers be developed in a basic program?

5. What responsibility does nursing have for the teaching of nursing tasks to volunteer workers in nursing situations prior to a disaster?

6. How can more educational programs in nursing be helped to provide inservice programs in disaster nursing for their faculty members?

7. How can nursing services be helped to provide inservice programs in disaster nursing for their personnel?

These questions were considered by the project institutions as they developed their pilot studies.

SETTING THE STAGE FOR THE DEMONSTRATION PROJECTS

STATEMENT OF BELIEF

The initial task of the Project Conference Group was to prepare a tentative statement of belief about nursing in disaster. This belief reads as follows:

> The role of the professional nurse in natural or enemy-caused disaster is to adapt nursing care with respect to lifesaving and health maintenance to situations where the number of people needing care and treatment greatly exceeds the number of prepared people available, and where supplies, equipment, physical facilities, and utilities are limited.

ASSUMPTIONS

Twelve general assumptions were developed as guides for the development of the project.

1. Disaster nursing care includes care of both the injured and the non-injured.
2. In general, priority nursing judgments in disaster nursing are such as to protect the greatest number.
3. The nurse functions within the organizational framework that has been designed for the disaster situation.
4. The collaborative role of the health professions in mass disaster is determined by the individual professions through joint effort.
5. The nursing profession clarifies for its members the role to be assumed by nurses in disaster situations and the nature and extent of the additional functions for which nurses may be responsible in disasters when numbers of physicians are inadequate.
6. The programs of the nursing organizations assist their members to keep prepared for the role of the nurse in a disaster situation.
7. The individual nurse assumes the responsibility of keeping herself informed and prepared to practice in a disaster situation.
8. The nurse brings to disaster situations an essential body of knowledge and skill which enables her to contribute to the health and welfare of the surviving populace.
9. The survival of any nation following an enemy attack is dependent upon planning by its government and preparation of its people to meet the inevitables of destruction.
10. The preparation of nurses to cope with the inevitables of enemy-caused action helps to determine the survival and future of the nation.

11. Institutions of learning that provide educational programs in nursing have a responsibility to prepare nurses to cope with situations created by natural as well as enemy-caused disasters.

12. Organized nursing services have a responsibility to prepare their nursing personnel to cope with situations created by natural as well as enemy-caused disasters.

GUIDELINES

Five agreements concerning the development of the study were reached.

First, each participating program committed itself to one purpose: the determination of how to prepare its graduates or staff to perform effectively in times of disaster. Second, it was agreed that each institution would develop its portion of the study according to its own beliefs concerning curriculum organization and inservice education. In other words, despite the sameness of purpose, there would be a diversity in the planning and implementation of the study in the programs. The fact was recognized and respected that the philosophy of the institutions varied and therefore that the specific educational objectives of practical nursing programs, diploma programs, baccalaureate degree programs, and graduate programs differ tremendously.

The third decision was that preparation for disaster nursing must have a basis in reality. The nurse or nursing student must be helped to experience some feeling of what it is like to function in a disaster. The second accepted assumption, "In general, priority nursing judgments in disaster nursing are such as to protect the greatest number," is hardly consistent with present-day nursing practice, in which the critically ill are usually accorded priority care. Also, in everyday nursing practice, the opportunity to observe nursing as it is practiced in a real situation offers a basis for planning desirable nursing care and for determining content for educational programs. In contrast, the extreme situations created by a disaster, especially those created by an enemy-caused disaster, are virtually unknown to the average faculty member, and she has no laboratory for learning herself or helping her students to learn through direct experience how to deal with such situations. It was recognized, however, that students in nursing are capable of intellectually understanding complexities and problems of patient care before they are able to cope with these complexities in an actual situation. Since this is a problem encountered in everyday teaching, it was anticipated that teaching the student how to cope in a disaster would be a major undertaking.

After a careful examination of this problem, it was agreed that a new philosophy of nursing care that would best meet the needs of the many victims in a disaster must be planned and implemented in the day-to-day teaching and practice of nursing.

The fourth agreement was that materials used or developed by the pilot institutions should be helpful to, or usable by, other educational programs and nursing services: films and other visual materials would be chosen from among those available on a local or state basis; resource persons utilized in program development would be chosen from among those available on a local or state basis; and state civil defense emergency hospitals would be used to demonstrate national and state plans. This universal availability requirement would also be reflected in the development of teaching materials, such as improvised equipment, in the teaching and utilization of nonprofessional personnel and in those activities that impinge upon the present-day practice of medicine but will be delegated to nurses in times of disaster.

The fifth agreement was that the content and methods of instruction can best be developed by specialists in the clinical areas rather than by a specialist in disaster nursing. This decision was in line with the belief that disaster nursing is an integral part of each nursing specialty and that only the clinical specialist has the background knowledge to develop further content in her specialty. This led to another agreement: a student must have a sound understanding of the practice of nursing before disaster nursing care can be taught. The development of this sound understanding demands that greater depth of content be taught in certain areas of practice, such as the management and nursing care of burn victims.

These agreements--the sameness of purpose, the recognition of each institution's prerogatives, the basis of reality for planning, the development of educational materials that would be useful to others, and the development of disaster nursing content by clinical experts--formed a basis for the development of the project within each of the participating institutions.

ESSENTIAL CONTENT AND SUGGESTED METHODS

The Project Conference Group also identified content that should be included in any instructional program that prepares for disaster nursing and in some instances suggested ways of teaching this content. The content decided upon as essential was that relating to:

1. The circumstances created by disasters. (Problem solving might be included among the teaching methods.)

2. Improvisation of procedures and equipment. (This might be included as an extension of everyday methods of practice.)

3. The psychological impact of disasters.

4. The philosophy of the mass-care plan, namely, that the greatest possible number should receive care and that the less seriously wounded should assist in the care of the more seriously injured.

5. Federal, state, local, and institutional plans for disaster preparedness.

6. The responsibilities of citizenship as well as those relating to professional participation in planning for disaster preparedness.

7. The principles of treatment as defined by the medical profession (since these must serve as a basis for planning nursing care in times of disaster).

8. Team organization, principles of teaching, and concepts necessary for assuming a leadership role.

Methods suggested for presenting this content were:

1. The utilization of all opportunities for teaching this content that are presented in everyday experiences.
2. Provision of vicarious experiences that will prepare the student or nurse to function in the chaotic circumstances of a mass disaster.
3. Practice in determining nursing priorities for groups of acutely ill patients, especially those who have had surgical intervention.

RESPONSIBILITIES OF PROJECT DIRECTORS

Another important preliminary to the implementation of the demonstration projects was the determination of the responsibilities to be carried by the project directors in the institutions. This decision was not made by the Project Conference Group, but was reached in each institution. For the most part, it was agreed by the administration, the faculty or the service staff, and the project director that the project director could best contribute to the study by performing the following tasks:

1. Actively participating in the appointed committees on nursing in disaster.
2. Assisting the chairman of the curriculum committee or the staff education director in the development of the educational framework for the project.
3. Participating in faculty and staff inservice educational activities.
4. Working with the faculties, according to the adopted plan, in curriculum analysis.
5. Maintaining resource materials and an extensive bibliography.
6. Assisting in working with related community agencies according to the over-all plan of the project.
7. Assisting in the preparation of inventories or studies within the study.
8. Preparing or assisting in the preparation of reports on the study.

TEACHER PREPARATION

It is, of course, a truism that whenever new goals are accepted for a curriculum, all faculty members must appreciate the importance of these goals, must be aware of their implications for curriculum content, and must have some knowledge of the specifics of this content. In the case of disaster nursing, this need was heightened by the decision not to treat this subject as a separate specialty with a specialist on the faculty to assume major responsibility for identifying the goals and seeing to it that they are achieved. The agreement that disaster nursing content and methods of helping students to learn it can best be developed by the teachers in the clinical areas had an obvious corollary: all faculty members in an educational program preparing its students to function in a disaster must have considerable depth of knowledge about disaster nursing.

SURVEYS OF FACULTY PREPARATION

According to this reasoning, preliminary to developing its part of the project, each of the participating educational units determined the extent to which its faculty members were prepared to assume their appropriate roles in the preparation of students in disaster nursing. In each case, the inventory yielded findings similar to those of the questionnaire survey of 1,194 educational programs. While on each faculty there were some members who had taken a course in first aid or disaster nursing or had had actual experiences in a disaster, an equal or greater number had had no disaster nursing preparation whatsoever.

Moreover, from the way they participated in these surveys, it was apparent that the faculty members varied greatly in their interest, knowledge, and enthusiasm for the teaching of disaster nursing. This interest extended over the range from those who said, "If there is a nuclear attack, I won't be here to worry about it," to those who said, "I feel passive interest with mild curiosity," and the rare remark, "I look forward to the project with the anticipation that it will be helpful to me in curriculum construction in my own situation."

The apathetic attitude expressed by many of the nurse teachers reflected that of the average citizen. Those who had a positive viewpoint were the ones who had attended mass casualty care or other disaster nursing courses, had had military experience, or had had nursing experience in an actual disaster.

Obviously, before the study could proceed it was necessary to institute a process or procedure that would help the faculty members accept and prepare for their roles in the project.

FACULTY INSERVICE PROGRAMS

Each participating educational unit developed its own plan for preparing its faculty members. These plans included two general types of activities:

1. Arrangements for faculty members to attend courses, institutes, and conferences sponsored by other organizations, such as the mass disaster care courses offered by the military services, the February, 1960, course offered to nurses by OCDM and ANA, courses in civil defense offered at the state level, and institutes and conferences held under the auspices of the AMA.

2. Programs developed by the faculties within the institutions for the self-education of their members.

Advantages

The inservice program developed within the institution appeared to be more productive than the courses offered outside the institution. It provided a means of capitalizing on the abilities of the individual members of the faculty; it allowed for concentration of content related to professional nurse responsibility; and most important of all, it provided a real opportunity for the faculty members to grow together as a group.

In addition to these advantages, the faculties considered this type of inservice program important for the following reasons:

1. An inservice program could be planned around the needs of the group. During the time span of the project, most of the courses and institutes offered by other institutions or agencies were sponsored by the military or the medical profession. While excellent in quality, they were designed primarily for the needs of the sponsoring organizations.

2. An inservice program could be planned to reach the largest number of instructors in the shortest period of time.

3. An inservice program could be conducted by any school or group of schools and would therefore be appropriate for a pilot project. (Funds for travel and extra space allotments at military courses are not universally available to all schools.)

Attendance by faculty members at institutes and courses offered by other agencies provided a nucleus of instructors who could contribute from either a medical, special organizational, or agency viewpoint. Besides, these persons had the opportunity to hear outstanding speakers on civil defense and mass casualty care and to participate in a multidisciplinary educational approach in defense problems. Experiences gained at these courses were extremely valuable to personnel in the project.

This is not to say that the development and implementation of the faculty inservice programs in disaster nursing presented no difficulties. Among the problems that were encountered were those relating to the timing and scheduling of the faculty "course," the identification of appropriate content, the selection of methods for presenting content, and the involvement of all those who would be participating in the preparation of students to function in a disaster.

Timing and Scheduling

The time allotted to formal faculty preparation varied from school to school. The total time allotted by any school did not exceed 30 hours.

To the faculty members, who already had a full teaching load, this amount of time, in itself, created a problem. This problem was complicated by the length of the period over which the faculty course was spread--a period that was influenced by the newness of the subject matter and the need for the faculty members to assimilate it in considerable depth. It takes time to accept a new philosophy and assimilate new facts, to transfer these into a working knowledge, and then to conceptualize how they can be planned as an integral part of day-to-day instruction. The faculty inservice program therefore could not be compressed into a few consecutive all-day sessions, but had to be extended over a period of several weeks.

On the other hand, the faculties recognized that they had a responsibility to get started on the work of planning for the introduction of disaster nursing content into their curriculums. It was obvious that this work could not be postponed until all faculty members were fully prepared to undertake it. To resolve this dilemma, the faculty groups decided to start their work on the curriculum before the conclusion of the inservice programs. During the interval when they were both learning and working, they relied on the experiences and knowledge of those of their members who had had some preparation in disaster nursing to bridge the gap until other members were more nearly ready to accept the philosophy of disaster nursing.

Content

Because disaster nursing content had not been identified, topics that were related to disaster nursing or mass casualty care were selected for study by the faculties. These topics did not vary greatly from one institution to another. As an example, the topics chosen for the inservice program at the University of Minnesota are presented here.

Understanding Disasters--Natural and Enemy-Caused: U.S. Disasters, Enemy-Caused Disasters, Problems Created by Disasters.

Physical Effects of Disasters: Chemical Warfare, Biological Warfare, Radiological Warfare.

Protective and Survival Measures: Evacuation, Shelter, Survival Care, Resuscitation and Care of Wounds.

Organization and Planning in Disaster Preparedness: Responsibilities and Organization for Civil Defense and Disaster Relief at All Levels.

Medical Care Plan for Mass Casualties: Role of the Nurse in Disaster, Priority of Care, Sorting Requirements of Medical Facility, Civil Defense Evacuation and Hospitalization, Military Evacuation and Hospitalization.

Psychological Aspects of Disasters: Psychological Research, Behavior in Disasters, Reactions to Civilian Disasters and Atomic Bombing, Prevention and Treatment of Psychological Casualties, Problems of Workers in Disasters.

Children in Disasters: Needs of Children, Conditions That Influence Reactions, How Children Handle Stress, Reactions to Disaster Experiences, Assistance to Child.

Methods

Lecture-discussion methods were usually employed. In addition, films and other visual materials were utilized, and some speakers from outside the institutions were obtained. Also, bibliographies and other materials relating to the chosen topics were prepared. For example, the project director at the University of Minnesota prepared bulletins of about 20 single-spaced pages in length that contained pertinent material and a bibliography on the topics selected for faculty study.

Since it was considered desirable for faculty members to have actual disaster nursing experience, the nursing service of the National Red Cross agreed that if a disaster presenting a variety of nursing problems should occur, the faculties in the project programs would be provided with a structured observational experience.

Participation

The involvement of all those responsible for teaching students is a problem that will undoubtedly face many faculty groups as they plan inservice programs and arrange for the curriculum studies which are prerequisite for teaching disaster nursing. In many educational institutions, some of the teaching of students is delegated to personnel in cooperating institutions. Even when all nursing courses are taught by faculty members employed by the institution that offers the educational program, the clinical learning fields may be widely scattered, so that it is difficult for the total faculty group to get together as frequently as is required for a good inservice program in disaster nursing.

The fact that this problem is not an insurmountable one was proved in the project. Two of the educational programs with instructional personnel in separated facilities were able to bring together all those involved in teaching nursing for the necessary faculty inservice preparation.

EXAMPLE OF FACULTY PREPARATION IN ONE SCHOOL

One of the agreements reached early in the study was that materials which the pilot institutions used or developed should be helpful to or usable by other educational programs and nursing services. With this in mind, a picture of the activities relating to faculty preparation in the Massachusetts General Hospital School of Nursing plan is presented here.

Inventory of Faculty Preparation

The faculty of the Massachusetts General Hospital School of Nursing used an inventory to determine the extent to which its 40 members had participated in activities related to disaster nursing preparedness. The specific activities studied were:

1. Completion of a first aid course in the past three years.
2. Recipience of a First Aid Instructor's Certificate in the past three years.
3. Completion of a disaster, mass casualty, or civil defense nursing course.
4. Participation in the teaching of a course in disaster nursing.

5. Teaching of nursing skills to groups other than professional nurses.

6. Active duty service in one of the military nursing corps.

7. Participation in a nursing capacity in an actual disaster.

8. Participation in the formulation of a disaster plan for a hospital or a health agency.

9. Participation in practice drills of an institutional or agency disaster plan.

The first two activities investigated were concerned with first aid, and participation in both was quite limited. Two of the 40 faculty members reported that they had completed a Red Cross or other recognized first aid course in the past three years. One of these two instructors is the only member of the total group who stated that she had received a First Aid Instructor's Certificate during this same period of time.

Nine of the faculty members had completed a disaster, mass casualty, or civil defense nursing course. One reported that she had completed three such courses, all in 1958; another had completed two, the first between 1950 and 1953 and the second in 1958. These courses were sponsered by several different organizations--the civil defense organization and schools of nursing being the two most frequently mentioned. With one exception, all of these courses had been completed during the previous four years. Their length ranged from 10 to 40 hours; courses of 20 and 40 hours were the most frequently mentioned.

One faculty member reported that she had participated in the formulation of a hospital plan. Seven stated that they had participated in "dry runs" or practice drills of this type of plan. One instructor reported that the "dry run" in which she had participated was a ward fire drill. The other six stated that they had participated in plans of a more inclusive type.

In summary, 20 of the 40 faculty members had participated in at least one of the activities investigated in this study. Nine reported one activity, six reported two activities, and three reported three activities each. Of the remaining two instructors, one had participated in five activities and the other in seven. At least one instructor in each area of the curriculum had participated in one or more of the activities under investigation.

Scope and Objectives of the Inservice Program

As the Committee on Faculty Preparation in Disaster Nursing made plans for the inservice program, it recognized that because of time limitations, the course could only provide an introduction to the topic of disaster preparedness and to the multitude of problems inherent in any disaster situation. Therefore, each faculty member would have to develop further understanding and technical skills, as she felt it necessary, by additional reading, discussion, and practical experience.

The following objectives for the program were developed:

1. Develop an awareness of the problem of preparing for natural or enemy-caused disaster.

2. Acquire knowledge of thermonuclear weapons, their effect on mankind, and the medical problems thus created.

3. Understand survival care and its implications for professional nurses as citizens.

4. Develop an appreciation of human behavior during disaster.

5. Acquire knowledge of basic operational planning for disasters by administrative agencies, medical services, and public health and welfare groups.

6. Understand the principles underlying management of mass casualties.

7. Acquire knowledge of extended functions for professional nurses in clinical nursing and administration necessitated by disaster.

8. Begin to appreciate the importance of incorporating concepts of nursing during disaster in the curriculum.

Participation

In planning the inservice program, the faculty committee hoped to secure the participation of all those involved in the preparation of the school's students. Accordingly, invitations were extended to, and were accepted by, the instructors in the institutions where the students were receiving obstetric and psychiatric nursing experiences. The strengthening of relationships with these instructors that resulted from this inservice program was one of the important by-products of the demonstration project.

Scheduling

The experience in the Massachusetts General Hospital School of Nursing illustrates the trial-and-error nature of attempts to arrange a workable schedule of inservice education activities.

After comparing the usual content and time allotment in similar courses offered by the state civil defense program, Walter Reed Army Institute of Research, and the nursing service's inservice program, the committee decided that a minimum of 24 hours would be required to present the material.

Initially, the committee was of the opinion that a three-day impact course would reach the largest number of instructors in the shortest period of time. This proved to be an impossibility, so as an alternative, it was decided to offer the course to half of the faculty members in one week and to repeat it for the remainder in the following week. Because of the instructors' teaching schedules and other responsibilities, it was not possible to carry out this plan.

Faculty Inservice Education Course in Massachusetts General Hospital School of Nursing

Class	Content	Method	Weekly Film	Film Source
I	Introduction to Disaster Nuclear Warfare Survival Care	Lecture	Day Called X Nerve Gas Casualties and Their Treatment	Mass. C.D. Agency Mass. C.D. Agency
II	Human Behavior in Disaster	Lecture	Combat Psychiatry: The Battalion Medical Officer	U.S. Army
III	Roles of Civil Defense and American Red Cross Medical Facility Organization "Lease on Life"	Lecture Film	Disaster and You Disaster Plan (Henry Heywood Hospital)	American Red Cross Mass. C.D. Agency
IV	Public Health and Welfare Services in Disaster	Panel Discussion	Public Health Problems in Mass Evacuation Mass Feeding (Film Strip)	Mass. C.D. Agency American Red Cross
V	Place of School in Disaster Sorting - Early Resuscitative Care	Lecture Slides	Early Resuscitative Care of the Severely Wounded	U.S. Army
VI	Clinical Nursing: Extended Function of Nurse Emergency Delivery	Group Discussion Demonstration	Sucking Wounds of the Chest First Aid for Fractures, Skull, Spine, and Pelvis	Mass. C.D. Agency or U.S. Navy U.S. Navy
VII	Clinical Nursing: Irradiation Improvised Equipment	Lecture Demonstration	Management of Burns, Part I - Supportive Care Management of Burns, Part II - Local Care	U.S. Army U.S. Army
VIII	Clinical Nursing: Burn Therapy Fractures	Lecture Demonstration Limited group practice	Mouth-to-Mouth Rescue Breathing Cricothyroidotomy Disaster Anesthesia	U.S. Army- Mass. C.D. Agency or U.S. Navy Amer. Med. Assoc.
IX	Principles of Management in Mass Casualty Situations	Small group discussions	Debridement-Soft Tissue Wounds To Live Tomorrow	Mass. C.D. Agency or U.S. Army O.C.D.M. Region I
X	Application of Principles of Management to Nursing	Small group discussions		

The plan that was eventually adopted consisted of a 28-hour course extending over a ten-week period. Twenty hours were devoted to formal class presentations and eight hours to supplemental films. The faculty was divided into two sections for the formal classes; one section met on Mondays from 3:30 to 5:30 p.m., and the other section met at the same time on Tuesdays. The films were shown on Wednesday, Thursday, and Friday afternoons. This plan made it possible for instructors to attend one section meeting and one film showing each week.

In addition to being the most feasible plan, this scheduling offered several advantages over the earlier ones. The time between meetings gave each instructor an opportunity to think through her own feelings, attitudes, and philosophy on mass casualty care. Group work on the curriculum analysis was carried on simultaneously with the last half of the inservice program, and many of the instructors felt that the concurrent course helped them considerably in their committee assignments.

Originally, the committee was not able to plan time in the program for extensive practice in techniques. During the course, however, many requests were made for practice periods in splinting, application of burn dressings, patient evacuation carries, estimation of the percent of burns and of fluid requirements, administration of open drop ether, and emergency delivery. Six hours were added to the course to provide opportunity for this practice.

Course Content and Organization

The content of the course is listed on the chart on the opposite page. It was organized under two general headings--Organization for Disaster, and the Nursing Role and Responsibilities. Organization for Disaster included the role of the American Red Cross and of Civil Defense, medical facility organization, public health and welfare services, and the place of the school in disaster. Introduction to Disaster, Human Behavior, and Sorting were treated as separate topics.

Two approaches--clinical care and leadership--were utilized in studying the nursing role and nursing responsibilities. Expanded functions of the nurse were explored and included emergency maternity care, management of burns and fractures, irradiation syndrome, and improvisation of equipment.

Methods

The chart indicating the content of the inservice education course at the Massachusetts General Hospital School of Nursing also shows the teaching methods used. These were chiefly lectures, films, and group discussions and practice. Other less frequently utilized methods were the simulation of disaster situations and the solving of certain hypothetical disaster nursing problems.

Lecture.--Speakers were obtained from local military installations and Civil Defense agencies as well as from within the nursing department.

Films.--Films were readily available from military and Civil Defense agencies. They were used to supplement the material presented in class in an effort to give the course more breadth and depth. Instructors felt these films were worthwhile, as they commented freely about them. In general, the value seemed to be related to the interest stimulated about topics discussed in class. The films also served as a means of reviewing first aid principles and resuscitative care and of portraying some of the potential functions of nurses during disaster. One of the responses not anticipated by the planning committee was that some of the films served to condition or desensitize some instructors to the sight of critically injured casualties. The faculty had some difficulty in interpreting this reaction, but it was thought that it might be a result of a relatively "protected" type of nursing experience or an expression of rejection of mass casualties and the proposed expanded role of nurses. After instructors had had a chance to talk about their reactions, many of them felt the films were very valuable and recommended their use in future programs.

Simulation of Disaster Situations.--Fortunately, one of the faculty members was a midwife, and she devised an extremely effective way to simulate an emergency delivery.

Casualty simulation was used only once in the program but with great success. Two committee members were made up with cosmetics to simulate casualties with extensive first, second, and third degree burns and the resultant shock. This provided an opportunity for the group to estimate the percent of surface burn and fluid requirements as well as to apply a burn dressing. In planning this session, the committee members learned that with practice, the application of cosmetics for casualty simulation can be done swiftly and skillfully.

Group Problem Solving.--An effort was made to help the participants to develop general principles of leadership associated with disaster situations, and during the last session, the group analyzed four problems specifically related to the nurse's role in disaster. These hypothetical situations were designed to focus attention on the nurse's ability to manage large wards with little or no professional assistance, to organize under chaotic conditions, to utilize volunteer help--both trained and untrained--and to develop disaster nursing care procedures and programs.

Situations for Group Problem Solving

Group I. "Utilize volunteer help, both trained and untrained"

Areas to be considered:
1. Sources of help
2. Identification of leaders
3. Identification of abilities and skills
4. Methods of teaching

Group II. "Develop disaster nursing care procedures"

How would you teach a lay person to give an intramuscular injection?
1. Identify problems
2. Prepare the procedure

Group III. "Develop disaster nursing care programs"

Situation: There are 2,000 people to be immunized against typhoid fever (1,550 adults and 50 children) following a flood in August.

Typhoid fever has broken out. Inoculations are indicated. A shipment of 200 20-cc. vials of typhoid-paratyphoid vaccine has arrived. You have on hand:

1 dozen 10-cc. syringes
100 needles
4 sterno cans
4 basins
a few empty coffee cans
cotton
soap and water
identification tags from C.D.
pads of paper and pencils

The standing orders are:

Three doses .5cc. once a week for three weeks to be given s.c. if the person has never had the vaccine.

One dose of .1cc. intradermally if the person has had the vaccine within two years or less.

Assignment: You are to set up the clinic and are responsible for giving the inoculations over the three-week period to the 2,000 people in the community.

You recall that an Emergency Hospital has been set up 20 miles away. You think there may be a Coleman Stove in it; if so, that would give you two burners to work with.

Group IV. "Organize under chaotic conditions"

Situation: The place is Everett, Massachusetts. The time is 1:30 A.M. on Saturday, July 1. The incident occurred in a large chemical plant.

One of the vats in the main building had sprung a leak and set off multiple explosions. The power of the explosions was so great that the main building collapsed, debris was blown through the air, fire broke out, sulfuric acid fumes pervaded the air. Windows in the nearby buildings and water mains were broken. Fire and rescue squads from the plant began to function immediately. The fire fighters had to rely on chemical fire extinguishers. The rescue squads began bringing out many injured workers. Some had been thrown great distances by the blast; large numbers had multiple wounds and fractures. Those near the exploded vats were severely burned, and the workers in nearby buildings were struck by flying glass.

The company immediately notified the city fire department, the police, and the nearest hospital, the Everett Private Hospital. It was estimated that approximately 300 people were injured. There are 60 on the night shift in the main plant. The ambulatory injured immediately went to the plant infirmary.

As soon as help came, the immediate evacuation of the severely injured began. All stretcher cases were to be sent to the Everett Private Hospital.

The Everett Private Hospital has 150 beds and 140 patients. There are 4 medical-surgical wards of 20 beds each, a pediatric ward of 20 beds, a maternity ward of 10 beds, and 2 private floors of 20 beds each. They also have 2 operating rooms--one for major surgery and one for minor surgery--and a delivery room. There are 4 graduate nurses and 4 senior students on night duty. Dr. Smith is in the delivery room attending his private patient in late first-stage labor. The hospital has no disaster plan.

You are the supervisor on night duty and are in charge of nursing. The director of nursing is on L.O.A. due to illness. You are notified patients will arrive in 30 minutes. You phone Dr. Jones, the director, who has gone for the holiday weekend to York Beach, Maine. He is stunned because this couldn't happen to him! He tells you Dr. Smith will be in charge until he arrives. It will take him about two hours.

You do a quick recall of available help: the graduates live out; there are 26 student nurses in the nurses' home. "Thank heavens I had that course in C.D. nursing last month," you think, and start out.

Assignment: How would you, the night supervisor, plan to meet the situation? What principles of nursing during disaster would you apply in meeting this situation?

Bibliography.--A bibliography was prepared to assist faculty members to explore more fully the topics presented in the classes. The reference source proved to be extremely valuable as instructors searched for ways to increase their understanding and eventually to enrich the content of their courses.

Reactions of Faculty Members

Initially, the faculty members reacted to the "required" course in a variety of ways. Some were very enthusiastic because they felt they needed to know more about disaster nursing generally and they believed the course would help them in curriculum construction. Those who appeared antagonistic to the program felt resigned or indifferent to the situation. However, responses to an opinionnaire circulated at the conclusion of the course showed that somewhere and somehow during the course, those who had originally approached the subject of disaster nursing with a resigned attitude had become personally involved in it. As one faculty member put it, "Personal involvement in ominous material creates something within you which you can't run away from." Comments like this indicated that the acceptance was not a passive one, but one that included recognition of the major role that the teacher of nursing plays in national security.

Not only was the personal involvement referred to directly, but criticisms indicated that the faculty members had accepted their responsibility in civil defense and were asking for more realistic problem solving and practice sessions in the estimation and treatment of burn victims, the handling of victims, the teaching of I.V., the management of emergency delivery problems, and other tasks that would be assumed by the nurse. Comments showed not only a change of attitude but a real depth of understanding of the subject.

> I was pleased that I had attended the course . . . the sense of helplessness was not as great . . . the philosophical search continues . . . however, I feel that professionally and personally I now have something positive and concrete to contribute in relation to disaster planning or in the participation in an actual disaster situation.
>
> It seemed good to participate in a faculty program whereby we actually worked together and shared . . . it promoted the feelings of comradeship and togetherness.
>
> I think this has been a great achievement . . . that faculty had a real opportunity to grow together as a group in another area where seniority is perhaps less important, where people are aghast and frightened and yet try to accept and plan with some faith.

The reactions of these faculty members to specific aspects of this program may be useful to others who are planning inservice programs for graduate nurses. For example, it would seem that sequence of topics and teaching methods are primary considerations in developing such programs. When attention in the course was focused on the role of the nurse and the clinical area, favorable attitudes were noticeable. Some participants expressed their attitudes as follows: "We began to finally talk about all the things that were of prime interest to us as nurses." "Nursing class had practical day-to-day content relevant to my responsibilities." "The information directly related to nursing I felt was useful."

On the other hand, opinionnaire answers showed that the group responded les favorably to the classes on organization for disaster. Most of these classes were presented by the lecture method, with little time for discussion or questions. Instructors had been provided with manuals published by the Disaster Nursing Committee of the Massachusetts Civil Defense Agency. The problem-solving approach with group discussions might have been used effectively in relation to organization for disaster, as it was later in discussing the nursing role and responsibilities.

It seems pertinent to mention that a major curriculum revision, not related to the disaster nursing project, was in progress, and an inservice program for clinical instructors, although already under way, had to be temporarily postponed until the completion of the program in disaster preparedness. The establishment of priorities in inservice programs and interpretation of this to faculty members would appear to merit thoughtful consideration by those responsible for devising and implementing such programs.

To summarize, the faculty development resulting from this inservice program consisted of:

1. A marked change in interest in the project and in the subject of disaster nursing.

2. A widespread desire on the part of individual members to increase their understanding and knowledge of the total subject as well as to explore specific areas.

3. A positive attitude toward the inclusion of disaster nursing content in the curriculum.

4. Motivation to improve current curriculum content.

5. A readiness to accept the next step in the study--curriculum analysis.

These outcomes were also characteristic of the inservice programs developed by the other faculties participating in the project.

THE DEVELOPMENT OF THE PROJECT IN THE THREE BASIC PROGRAMS IN PROFESSIONAL NURSING

The 1958 questionnaire survey of disaster nursing activities in all types of educational programs in nursing revealed certain similarities between the baccalaureate basic programs and programs leading to a diploma. Insofar as the 1,194 programs that responded to the questionnaire were concerned, a majority of the programs of these two types were providing instruction in disaster nursing--66 percent of the diploma programs and 68 percent of the baccalaureate basic programs, in contrast to 27 percent of the practical nursing programs, 47 percent of the associate degree programs, and 38 percent of the baccalaureate and masters degree programs for graduate nurses. (See Figure 1 in the section headed "Current Status of Disaster Nursing Preparation.") Moreover, there was a marked similarity in the extent to which the diploma and baccalaureate basic programs were helping their students to solve the seven disaster nursing problems that had been identified by the Project Conference Group (Table 2 in "Current Status of Disaster Nursing Preparation"). Possibly one of the reasons for this emphasis on the part of these two types of programs is that they are, in general, longer than the other types and provide for all their students a wider range of clinical nursing experiences than do the practical nursing or graduate nurse programs.

SIMILARITIES AND DIFFERENCES IN PLANS

Because of the similarities indicated in the 1958 survey, it is interesting to compare the disaster nursing projects that were developed by the three basic professional programs in this study--the diploma program of the Massachusetts General Hospital School of Nursing and the baccalaureate basic programs of the University of Minnesota and Skidmore College. The differences, in particular, are worth examining because they illustrate the fact that there is no one plan of instruction in disaster nursing that is suitable for all programs in nursing, even programs of the same general type.

Content

The three faculty groups were in fairly close agreement about the specific knowledges and skills that their graduates should have at the conclusion of their educational programs. This resemblance is understandable, since the faculties had the same guidelines--accounts of how nurses function in a disaster which were available in the literature and, after the projects had been under way for some time, the statements about the role and functions of the nurse in disaster situations which were issued by the American Nurses' Association and the American Medical Association.

When they began to study how these roles and functions could be translated into curriculum content and learning experiences, the three faculty groups were confronted with the same problem: how to provide preparation for the medical responsibilities that a nurse might be called upon to assume during a mass disaster. Adequate preparation for these responsibilities, they believed, would require the students to have clinical learning experiences in managing normal deliveries, administering anesthetics, and performing certain surgical procedures; yet, such learning experiences were proscribed by existing medical practice acts. With the exception of a nurse midwife on one of the faculties, the faculty members themselves were not prepared to manage deliveries, and few, if any, felt qualified to perform some of the surgical procedures.

None of the faculties was able to solve this paradox completely. Observational experiences, role playing, and films plus discussion were utilized, and the school with the nurse midwife faculty member instituted a two-hour session in which the management of a delivery was demonstrated on a "simulated mother." By and large, however, the three faculty groups were in agreement with the one that registered this attitude: "Reluctance to accept the responsibility for (teaching) surgical procedures."

It should be noted that agreement about the outcomes that could be expected and the limitations that must be anticipated did not lead to identical decisions by the three faculty groups about the content that should be included in the nursing program. The most noticeable difference in the content taught pertains to that in the first aid area. In two of the programs--those of Skidmore College and Massachusetts General Hospital--a unit or course in first aid was retained in the curriculum. The revision of these units so that they would include more depth and complexity of content was one of the results of the disaster nursing project. In contrast, the University of Minnesota faculty decided that the completion of a first aid course should be a prerequisite to admission to the school of nursing and accordingly did not include this content, at the beginning level at least, in the three years of the program required of students majoring in nursing.

Courses Studied

In each of the three basic programs, the faculty studied certain courses to determine the relationship of the content to disaster nursing preparedness. However, there was variation in the courses included in this study.

One of these variations might be termed an inherent one. The diploma program did not have a course in public health nursing to utilize for giving instruction in disaster nursing per se or for emphasizing the application of content in disaster situations. In planning for the placement of disaster nursing content, the faculties of the baccalaureate degree programs chose the public health nursing course as the one in which to put major emphasis on such topics as shelter living and family survival. In the diploma program of the Massachusetts General Hospital School of Nursing, these topics were covered in a unit that was devoted to instruction in disaster nursing. This difference will undoubtedly be characteristic of educational programs across the country.

Another difference pertained to the inclusion of science courses in the study. In the project conducted at the Massachusetts General Hospital School of Nursing, the physical, biologic, and social science courses were subjected to the same study as the nursing courses, and specific content in these courses was identified as foundational for disaster nursing. Except for the pathology course in the University of Minnesota program, the science courses in the two baccalaureate degree programs were not analyzed to the point where content specific to disaster nursing was identified.

It should be noted that science instruction in the Massachusetts General Hospital program is provided by members of the nursing school faculty, whereas in the two baccalaureate degree programs in the project, all, or almost all, of the science courses are given in other educational units in the institution. In any curriculum study it is, of course, more difficult to involve faculty members from several educational units than to involve those in one unit only. It should not be assumed, however, that courses taught in other units of the institution or even in other institutions are necessarily excluded from studies such as these. In the Massachusetts General Hospital School of Nursing, the teaching of obstetric nursing and psychiatric nursing is delegated to cooperating institutions; yet, the teachers in these institutions participated in all phases of the school's disaster nursing project--the faculty inservice program, the curriculum analysis, and the implementation of the plans that resulted from this analysis.

Placement of Content

Perhaps the greatest variation in the projects developed by the three basic professional nursing programs concerned the placement of disaster nursing content in their curriculums. In all three instances, the faculty recognized that competence in disaster nursing is dependent on competence in the everyday practice of nursing and that much of the content in the existing courses might be considered as preparation for functioning in a disaster. All three faculty groups also recognized that for assuming the nurse's role in a disaster, some understanding and some skills are needed over and beyond those required for standard nursing practice. It was in the placement of this latter kind of content--content that might be termed disaster nursing content--that the three programs differed.

The faculties responsible for the University of Minnesota and Skidmore College programs believed that in these two programs, the students can best acquire the knowledge and skills needed for functioning in a disaster as they progress through the curriculums. They therefore utilized the learning experiences in existing courses to emphasize the aspects of nursing care that would be of importance in a disaster and to present content relating to disaster nursing subjects. In addition, at various intervals in the curriculum they provided series of sessions that were focused on disaster nursing.

The faculty of the Massachusetts General Hospital School of Nursing, on the other hand, believed that under their curriculum plan, their students can best learn disaster nursing content at a point when they are able to synthesize all the learnings they have acquired throughout the curriculum. Accordingly, in the program of this school, content specific to disaster nursing was taught during the last few months of the program.

Another difference that might be noted is the extent to which the three programs placed disaster nursing content within other courses. In the Skidmore program, all disaster nursing instruction was incorporated in existing courses; the two series of sessions focused on disaster nursing contributed to the objectives of the courses "Medical, Surgical, Pediatric Nursing" and "Team Management" and were set up as units of these courses. In the Massachusetts General Hospital program also, disaster nursing instruction was provided in a unit of the student internship period because of the similarity between the objectives of the total internship experience and the goals that the faculty had identified for disaster nursing instruction. In contrast, although existing courses in the University of Minnesota program were utilized to emphasize disaster nursing principles, the three disaster nursing blocks were not planned to fulfill the objectives of other courses, nor were they considered a part of other courses.

EVOLUTION OF THE PLANS

In addition to the variations in the disaster nursing plans of instruction of the three educational programs, the plan of each program and the way in which it was implemented varied from year to year. It would not be feasible to describe all the changes that took place in the plans during the NLN project period or to predict those that may take place in the future, but some of the reasons for changes might be noted here. Changes may be occasioned by:

1. The changes in the total curriculum and in the content of individual courses which ensue from the ongoing process of curriculum development.

2. The additions to the body of knowledge about disaster nursing and to the materials that are available for presenting this knowledge.

3. The increased knowledge about disaster nursing which faculty members acquire as they continue their efforts to prepare themselves through inservice programs and extramural courses.

4. The evaluation of the plans of instruction, as measured by the extent to which students have mastered the expected competencies and behaviors and the emotional reactions of the students to the instruction.

5. The effect that a disaster preparedness project in one educational unit may have on other units in the institution.

Some of the changes that took place in the Skidmore College project will illustrate a few of the effects of this evolutionary process.

After the disaster nursing project had been started in the Skidmore program, the faculty's regular study of the curriculum (not occasioned by the disaster project) resulted in major revisions in the course "Medical, Surgical, Pediatric Nursing" with respect to content, placement of content, and rotation of students. This revision resulted in changes in the disaster nursing instruction given in this course. The unit of the course entitled "First Aid and Emergency Care" was placed later in the course, so that although the principles and techniques taught in the American Red Cross course were retained at the beginning level, it was possible to advance first aid content to a professional level. The strengthening of some of the experiences in the total course, such as those in the operating room and the recovery room, also had an effect on the teaching of disaster nursing content. As for the effect of the disaster project on the revised course, the preparation of the faculty members in the problems of disaster provided them with a frame of reference for the better integration of content on accident and emergency situations and content on specific diseases, injuries, and care--an improvement that had been one of the goals of the revision.

The changes in the course "Public Health and Public Health Nursing" might also be cited. The first year, the disaster nursing content in the course consisted of information about local civil defense plans presented in a three-hour session by an officer of the Manhattan Office of Civil Defense. In 1960, the coming presidential election stimulated the inclusion of political science questions that extended the scope of content beyond defense planning for physical survival. By 1961, material had become available which made possible the teaching of content on radiation fallout and essentials for survival in a family shelter.

Changes made as a result of the evaluation of students' reactions might be illustrated by the account of an experience in the Skidmore unit concerned with problems created by a disaster, in which the effects of extreme stress on individuals and groups are emphasized.

> "We have attempted to explore this subject intellectually, drawing upon the students' knowledge of and experience with human behavior. Specific reading assignments are made as preparation for discussion of the students' own values and philosophy as compared with the philosophy of 'the greatest good for the greatest number.' The processes and effects of rumor, nurse leadership occasioned by lay expectations, emergent lay leadership, the contagiousness of fear, and the fallibility of decisions under stress are all explored through group discussion.
>
> "Over the past three years of many such discussions, it has been noted by the disaster project director that the students become anxious and often display a helpless and fatalistic attitude at some point. In May, the faculty member who directs the 'Integration of Mental Health Project' agreed to participate in these discussion classes. The two faculty members planned a flexible structure for discussion and certain areas of content.
>
> "The discussion class started with an intellectual exploration of certain behavioral responses to disaster situations. The project director then told several personal experience stories, which created an atmosphere of suspense and some anxiety. The students were then presented with a disaster problem in a familiar setting and asked to set up a plan of action to meet the situation. There were a few questions and a few generalized nonoperational suggestions, but the prevailing attitude among the students was one of apathy.
>
> "At this point, one student expressed the opinion that the situation was hopeless, that actually nothing effective could be done. The student group became restless; there was a great deal of shuffling and changing of positions. The apathy changed to active anxiety, with almost everyone in the group contributing opinions, judgments, and rationalizations to the effect that the situation was hopeless and, in reality, nothing could be done. Then a general silence prevailed; a few leading questions evoked no constructive response.
>
> "Then one faculty member described a similar disaster problem in another setting and gave a rather dramatic account of how she would behave if confronted with it. This account of specific action seemed to mobilize the students. They responded with specific problems and took

issue with the faculty member's choice of action as a leader in a disaster situation. From then on, the two faculty members took leadership in bringing the students to the point of utilizing their knowledge of the disaster scene, going back to the facts in order to define the original problem, and using knowledge, judgment, and constructive action in a problem-solving framework.

"The final plans and alternatives worked through by the students, as well as the philosophical approach, were realistic, practical, and in operational terms. Later, the faculty members reviewed the experience in the class and were excited by the progress in interaction and in the behavior patterns exhibited by the group. We were of the opinion that we had created a stress anxiety reaction that had immobilized the students and that we had been able to lead them back to a state of considered action. This experience had opened up a whole field of possibilities in the area of teaching methods, applicable to small groups in a classroom setting, that could result in actual experiential learning. Arrangements were made for the mental health project director to have another class with the same group of students in order to review with them the interaction processes and assist them to recognize and analyze the group experience."

The report submitted by the Skidmore faculty also indicates, as a possible future development, an exploration of the relationship between the disaster preparedness responsibilities of the nursing department and the liberal arts offerings of the institution. This report points out that disaster prevention is a responsibility of citizenship and therefore that content about it might be introduced into courses available to all students. It is possible that the implementation of plans for disaster preparedness in a nursing unit may lead to the participation of other faculty groups in broader disaster content studies in which not only courses considered foundational to nursing but also courses in history and political science will be investigated.

IMPLICATIONS FOR OTHER PROGRAMS

The goals of disaster nursing instruction adopted by the three basic professional programs in the project were much the same. Nevertheless, the instructional plans for achieving these goals were very different. Moreover, each program's plan underwent change from one year to the next.

These facts should be carefully noted by readers of this report. They demonstrate an important principle. Any school that wishes to prepare its students to function in a disaster must develop its own plan in accordance with its own philosophy, its faculty and other resources, and its current and developing curriculum. This principle applies to all units offering education in nursing--schools offering practical nursing, associate degree, graduate nurse baccalaureate, or graduate programs and nursing services offering inservice education--as well as to those offering basic professional preparation.

The accounts of the demonstration projects that follow include a wealth of specific data--outlines of course content and methods of presenting this content, charts showing the placement of learning experiences within the curriculum, tests for measuring students' knowledge prior to and following these learning experiences. These materials are not intended as models, or even as guides, for other schools. Parts of them may, of course, be suitable for adaptation by a school; other parts may be usable by another school. The main purpose in presenting the materials, however, is to illustrate the scope and depth of the studies undertaken by those who developed the plans, the specificity with which they identified disaster nursing content and indicated its placement in their curriculums, and the precision with which they measured the results of their efforts. These qualities of inclusiveness and specificity, rather than the materials that were developed, might well serve as a touchstone for those who wish to develop or improve instruction in disaster nursing.

DEMONSTRATION IN THE DIPLOMA PROGRAM OF THE MASSACHUSETTS GENERAL HOSPITAL SCHOOL OF NURSING

GENERAL DESCRIPTION OF THE TOTAL PROGRAM

The Massachusetts General Hospital School of Nursing is one of two divisions of the Nursing Department of the Massachusetts General Hospital, the other division being the nursing service.

It is the purpose of the Massachusetts General Hospital School of Nursing to prepare young women to give comprehensive patient care within the potential of the hospital setting. This program can provide a sound foundation in nursing upon which graduates with ability and interest may progress to further education for nursing and to positions requiring beginning skills in leadership. Since the students admitted to this program are for the most part students from high school, the level of teaching is geared to the needs of the high school graduate. The program is designed to assist the student to develop the competence needed as a graduate nurse to give that portion of patient care which is the unique function of the professional nurse. The school accepts the responsibility of maintaining a program at the level necessary to provide a strong foundation upon which may be built future study and experience necessary to perform more advanced professional functions.

The school does not prepare its graduates for public health nursing.

The three-year instructional program is divided into two periods: the basic educational period and the student nurse internship. The basic educational period covers the first two years of the program, during which the basic natural and social sciences and clinical nursing are taught. Cooperating institutions provide the instruction in obstetric and psychiatric nursing. The third year is devoted to the student internship, which provides an opportunity for the student to emerge from the student-centered stage, in which concentration tends to be more on self and learning, to the more highly skilled stage, in which the patient and his family become the primary focus. The nursing student intern develops those skills and competencies requisite for a graduate nurse and at the same time strengthens her social judgmental ability as well as her basic nursing skills through more concentrated patient care.

The curriculum plan appears on the following page.

Course	Hours of Instruction	Concomitant Related Clinical Experiences
First Year		
Anatomy & Physiology	100	
Chemistry	60	
Microbiology	45	
Health Education	16	
Human relations Seminar	22	
Orientation	15	
Personality Backgrounds	85	
Social Background in Nursing	56	
Introductory Nursing	140	(158 hours)
First Aid	10	
Medical-Surgical Nursing	216	20 weeks
(Includes Gynecology)		4 weeks
Nutrition & Diet Therapy	60	4 weeks
Second Year		
Communicable Disease Nursing	30	13 weeks
Nursing of Children	90	
Obstetric Nursing	63	13 weeks
Eye, Ear, Nose, & Throat Nursing	34	4 weeks in clinics
Nursing Care of Ambulatory Outpatients	20	
Neuro-orthopedic Nursing	32	5 weeks
Psychiatric Nursing	129	13 weeks
Third Year		
Operating Room Nursing	29	8 weeks
Team Nursing	10	
Student Nurse Intern Seminar	20	32 weeks
The Group Process	15	
Nursing in Disaster	25	
Professional Adjustments	20	
Senior Clinical Elective		8 weeks

PHILOSOPHY ABOUT DISASTER NURSING PREPARATION

The following statement of philosophy was developed for the entire Nursing Department of the Massachusetts General Hospital.

In peacetime, the professional nurse has responsibilities for helping people maintain their optimal health, for giving comprehensive care based on the needs of the person who is ill, and for assisting people who have been ill to adjust to their respective roles in everyday living as they return to their homes and communities.

When disaster strikes, an irreversible change in a sociocultural pattern results. We live in the age when not only natural disaster but also disaster from modern warfare may strike. The government, having recognized this impending threat, has planned for its survival and the survival of its people through the establishment of the Office of Civil and Defense Mobilization. The armed services and the Red Cross have demonstrated how one can survive when there is a plan and people are organized to carry out the plan.

Much of the knowledge needed to cope with natural disasters, such as fires, floods, and explosions, is basic for war disaster nursing, but the latter calls for an attitude and knowledge unique to casualty care. In war disaster, the philosophy of sorting patients according to priorities for treatment and giving the best care to the most patients needs considerable interpretation to nursing groups. It is anticipated that there will be a great disparity between the number of victims and medical personnel and facilities. If the survivor with the most knowledge and leadership in the situation is a nurse, she will be expected to extend the practice of nursing beyond the usual boundaries of peacetime nursing. The clinical and value judgments may not always be the best, because the shock of disaster may numb her acuity of observation and judgment in various ways and in varying degrees, just as it numbs the acuity of other survivors. However, the victims and the government will expect the nurse to assume her professional civilian responsibilities to the best of her abilities. In order that she may know what to do and how to do it, the nurse must be taught and motivated to prepare herself and others to assume active roles in the areas of self-survival during disaster.

We believe this philosophy is one which should permit us to function as individuals and as nurses in a disaster. It is the responsibility of the School, through its various committees for disaster, to interpret the philosophy to the faculty. The faculty, having accepted it, has the responsibility of incorporating it into the various strands for background teaching and in the core course for the students. The acceptance of the philosophy and generalizations of disaster nursing should help the student to prepare herself to interpret her possible role as a nurse within the framework of medical plans for disaster and motivate her to keep abreast of the current changes and the implications for nursing.

Since we are living in a nuclear age, the Nursing Service at Massachusetts General Hospital believes that all its personnel should be prepared to function effectively in time of disaster when the disaster is contained within the hospital and immediate community and that its personnel should receive basic instruction in preparation for large-scale disaster involving mass casualty care.

Inasmuch as the school of nursing does not provide a course in public health nursing, the faculty agreed that the public health aspects of disaster nursing would not be entirely covered in the curriculum.

FACULTY GOALS AND ACTIVITIES

Consideration was simultaneously given to a faculty inservice program* and an analysis of the present curriculum to determine the means by which the essential disaster nursing content could be taught. The faculty's goals and activities, particularly those pertaining to the curriculum, can be deduced from the tasks that the School Committee on Nursing during Disaster outlined for itself. These activities were:

1. To explore the means of preparing the faculty to integrate the principles of disaster nursing in the curriculum.
2. To prepare plans by which these means may be implemented.
3. To formulate tentative objectives for the student program in nursing during disaster.
4. To analyze the revised curriculum to determine which of those objectives are now being met.
5. To plan for the inclusion of learning experiences for the achievement of those objectives that are not now being met in the instructional program.

INVENTORY OF STUDENT PREPARATION

Before any decision was made about what content would be taught, an inventory was taken to determine (1) the extent to which the students had already had preparation for participating in a mass disaster, (2) the extent to which their families were prepared, and (3) how many of them had had experience in a disaster situation. This student inventory was accomplished by means of a 22-item questionnaire that was completed by 367 of the 382 members of the student body. The first six questions on this questionnaire asked for such background information as the student's name and address. Questions 7 through 22 are reproduced here.

7. Have you completed a first aid course? Yes____ No____ Length of course? ____ (hours) When (approx. year)?______ Sponsorship: Red Cross?_______ Civil Defense?_____ Other (specify)?_____

8. Have you completed an Instructor's First Aid Course? Yes____ No____ Length of course?_____ (hours) When?______ Sponsorship: Red Cross?_____ Civil Defense?_____

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* The faculty inservice program at this school has been described in the section "Teacher Preparation."

9. Have you completed the Red Cross Home Nursing Course? Yes____ No____
Approx. year?______

10. Have you completed the Red Cross Home Nursing Instructor's Course?
Yes____ No____ Approx. year?______

11. Have you completed any Civil Defense Courses other than first aid?
Yes____ No____ Course?____________ Length_____(hours) Approx. year_____

12. Have you been a member of any Civil Defense organization? Yes____ No____
Organization________________________ Your role____________ Year______

13. Have you participated in any Civil Defense activities? Yes____ No____
Activity______________________________ Your role____________ Year______

14. Describe the air raid warning signal for "Alert."

15. Describe the air raid warning signal for "Take Cover."

16. What is Conelrad? Where is it located?

17. Does your family have a specific plan of action to follow in the event of a large-scale disaster? Yes____ No____ ?____ What is this plan?

18. Do you have any younger brothers and sisters? Yes____ No____ Have any specific plans been made in their schools to care for them in the event of a large-scale disaster? Yes____ No____ ?_____ What is this plan?

19. Have your younger brothers and sisters (ages 5 - 7) been instructed as to what they should do if they come home from school unexpectedly and no one is at home? Yes____ No____ ?____ (Please indicate here if you do not have any younger brothers or sisters in this age bracket. ________________) What is this plan?

20. Does your family have the first aid supplies recommended by the Civil Defense authorities? Yes____ No____ ?____ Are the supplies kept in one specific location? Yes____ No____ ?____ Do all the adults and older children know the location? Yes____ No____ ?____

21. Does your family have the emergency food and water supplies and other equipment recommended by the Civil Defense authorities? Yes____ No____ ?____ Are these supplies packed for immediate departure? Yes____ No____ ?____

22. Have you ever been in a disaster?* Yes____ No____
a. What was this disaster?

b. What were your first reactions?
(1) As a victim?
(2) As a worker? (Briefly describe your job.)

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* The word "disaster" was not defined, because it was thought that if it were to be a factor in a student's preparation, she should answer the question according to her own interpretation of the word.

c. Did you have previous preparation for the disaster? Yes____ No____
d. Did this preparation help you? Yes____ No____
e. How did this preparation help you?

The findings from this questionnaire are summarized in Tables 1, 2, and 3. Study of these findings revealed some interesting facts to the faculty. In the report analyzing the data, it was noted that except for the completion of a first aid course, less than 10 percent of the students had completed courses relating to disaster preparedness or had engaged in Civil Defense activities (Table 1).

While about two-thirds of the students knew the meaning and location of Conelrad, only about one-fifth were able to identify the "Alert" and "Take Cover" air raid signals (Table 2). The report took note of the fact that radio and, to a lesser degree, television were being used quite extensively to explain Conelrad, whereas posters constituted the chief means of informing the public about air raid signals.

Although 37, or 10 percent, of the students reported that their families had "specific" disaster plans, the plans described by most of these 37 were quite general in character. Fifty-five percent of the 231 students who had school-age siblings reported that plans had been made in the schools to care for the children in the event of a large-scale disaster. However, the descriptions of these plans revealed that most of them were actually fire or air raid drills.

Sixty-three students reported that they had been in one or more disasters. Floods, hurricanes, and tornadoes were mentioned by 53 of the students; the Hartford, Connecticut, fire by two; and World War II by two. Other disasters reported were earthquake, small gas tank explosion, forest fire, polio epidemic, train wreck, automobile accident, and a camper's epileptic seizure. It had been thought that experience in an actual disaster might have influenced the extent to which a student or her family had sought to prepare themselves for a disaster. However, although the report noted that there were some differences between the responses of those who had been in a disaster and the answers of those who had not, it was concluded that experience in a disaster did not appear to be a significant factor in the items considered in the study.

Table 1. Participation in Activities or Courses in the Area of Personal Preparedness

Activities or Courses	Participation in Activities or Courses			No Disaster Experience		Disaster Experience	
		Number	Percent	Number	Percent	Number	Percent
First Aid Course (N=367)	Yes	132	36.0	107	35.2	25	39.7
	No	235	64.0	197	64.8	38	60.3
Instructor's First Aid Course (N=363)	Yes	2	0.6	0	0.0	2	3.18
	No	361	99.4	300	100.0	61	96.82
Home Nursing Course (N=361)	Yes	31	8.7	26	8.7	5	8.2
	No	330	91.3	274	91.3	56	91.8
Instructor's Home Nursing Course (N=362)	Yes	0	0.0	0	0.0	0	0.0
	No	362	100.0	300	100.0	62	100.0
Other Civil Defense Courses (N=361)	Yes	10	2.8	6	1.7	4	6.4
	No	351	97.2	293	98.3	58	93.6
Civil Defense Activities (N=355)	Yes	15	4.2	8	2.7	7	11.3
	No	340	95.8	285	97.3	55	88.7

Table 2. Knowledge of Civil Defense Methods of Communicating with the General Public

		Knowledge of:							
		Alert Signal		Take Cover Signal		Conelrad		Location of Conelrad	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Group Responding	Yes	73	20.0	66	18.0	239	65.3	233	63.7
	No	293	80.0	300	82.0	127	34.7	133	36.3
	Total	366	100.0	366	100.0	366	100.0	366	100.0
No Disaster Experience	Yes	53	17.4	52	17.1	196	64.5	189	62.2
	No	251	82.6	252	82.9	108	35.5	115	37.8
	Total	304	100.0	304	100.0	304	100.0	304	100.0
Disaster Experience	Yes	20	32.3	14	22.6	43	69.4	44	71.0
	No	42	67.7	48	77.4	19	30.6	18	29.0
	Total	62	100.0	62	100.0	62	100.0	62	100.0

Table 3. Extent of Family Preparedness

		Specific Family Plan		First Aid Supplies		Food-Water Supplies		School Plan for Siblings		Instructions to Siblings 5-7 yrs. old	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Group Responding	Yes	37	10.3	83	23.1	30	8.3	127	55.0	20	38.5
	No	282	78.6	234	65.0	300	83.6	38	16.4	24	46.1
	?	40	11.1	43	11.9	29	8.1	66	28.6	8	15.4
	Total	359	100.0	360	100.0	359	100.0	231[a]	100.0	52[b]	100.0
No Disaster Experience	Yes	25	8.5	68	22.9	19	6.4	106	54.9	17	40.5
	No	236	79.7	193	65.0	252	85.1	32	16.6	19	45.2
	?	35	11.8	36	12.1	25	8.5	55	28.5	6	14.3
	Total	296	100.0	297	100.0	296	100.0	193	100.0	42	100.0
Disaster Experience	Yes	12	19.1	15	23.8	11	17.5	21	55.3	3	30.0
	No	46	73.0	41	65.1	48	76.2	6	15.8	5	50.0
	?	5	7.9	7	11.1	4	6.3	11	28.9	2	20.0
	Total	63	100.0	63	100.0	63	100.0	38	100.0	10	100.0

a. 231 students reported having siblings of school age.

b. 52 students reported having siblings in 5-7 age bracket.

ANALYSIS OF CONTENT IN EXISTING COURSES

To determine the content in the existing courses that was relevant to disaster nursing, the entire group of instructional personnel, including those in cooperating obstetric and psychiatric hospitals, was divided into seven "area committees." Each of these committees was assigned one area of the curriculum--the medical nursing area, the surgical nursing area, the biological and physical sciences area, and so on--to determine what content would contribute to the student's preparation for her role in a disaster. Later, the materials prepared by these committees were checked against the statements on roles and functions issued by the American Nurses' Association and the American Medical Association.

Examples of the findings resulting from the analysis of two courses--a behavioral science course and a nursing course--are given here.

Content in the Course "Social Backgrounds and Personality Development" Relevant to Disaster Nursing

Course Content	Knowledge Needed by and Role of Nurse in Dissster as Identified by:		
	Faculty	ANA	AMA
Groups to which we belong. Functions: Support of individual. Characteristics of group behavior.	Large numbers of people are in stressful situations.	Nurse must be oriented to and psychologically prepared for disaster work.	Nurse: management of the psychologically disturbed.
Basic emotional needs Importance of feeling of belonging. Behavior in stress situations. Physiological reaction in emergency.	Nurse will need to understand behavior in psychological stress in disaster.		
Constructive and destructive behavior. Mechanisms of defense under stress: Regression Aggression Withdrawal Projection and others Targets for hostility, anxiety, aggression, frustration.	Behavior of herself and others.	Prepares, administers, establishes priorities, and supervises nursing care plans for large and unpredictable number of sick and injured in surviving population.	
Problems involved in identifying, clarifying, and assuming new roles. Nurse's behavior and feelings in stress situation.	Her own behavior.		

Recognizing and dealing with persons under stress. Verbal and nonverbal communications, listening, need for sharing. How to channel energies wisely.	Nurse will have to assess situation and evaluate stress behavior.	In planning for care, makes detailed evaluation of needs, habits, resources.	Numbers of people to deal with psychologically ill.
Less formal groups helpful or informative in crisis: Individual "caretaker": policeman, fireman, corner-store-man, priest, etc.	Nurse will delegate to others responsibilities in care of psychologically disturbed.	In planning for care, becomes familiar with available resources and personnel. Communicates and acts as liaison between patient and community.	
How nurses must and do take effective responsibility in isolated areas, lacking conventional facilities and personnel. Resources helpful to nursing and other medical personnel, among large groups of people. Health education information widespread through population by many groups even in elementary schools. How use of such resources helps to lift group morale. Capacity of a group with high morale to meet stress. Other factors contributing to morale.	There are assets as well as liabilities in each group.	as above	as above
Source of attitudes toward cleanliness, authority, respect for rights of others.	Shelter dwelling.	Interprets to patient that he himself is the most effective resource in promoting successful therapy and rehabilitation.	

Course Content	Knowledge Needed by and Role of Nurse in Disaster as Identified by:		
	Faculty	ANA	AMA
Attitudes toward illness, accident, disaster, helplessness, terror, indifference; rational understanding and active use of information.	Reaction toward meeting a new way of life.	Assists in provision of optimum physical and emotional environment.	Management of the psychologically disturbed.
Effects on family stress. Resources for moral and other support. Emotional meaning of food and eating.			
Reaction to the disaster situation itself as well as to the medical situation.		Observes, records, and reports to appropriate person, if available, symptoms, reactions, progress.	Management of the psychologically disturbed.
Social factors in environment affecting patient care.	Necessity for continuation of interrupted essential sanitation services.	Interprets to appropriate authority social and psychological factors.	To veterinarians: Sanitation to include waste disposal; examination of water sources, methods of water treatment and distribution; milk sources, methods of sterilization and distribution; and inspection of foods. (Group 1, Veterinarians)
"Social factors in environment affecting patient care" See pages 1-2 from AMA report,			

also: Services now normal provided by urban community which families used to arrange: Water supply, sewage & other waste disposal Principles involved - how this works out in rural as well as in urban areas. Measures suggested for provision of these needs in disaster. Variations in notions of cleanliness or of its necessity, within and between cultures. How these attitudes are expressed in actual practice. Boston's sources of water and provisions for waste disposal. Relationship of metropolitan and wider state areas. Significance of geographical location. Housing: Criteria for adequacy. Relation to physical, social, emotional health. Implication of overcrowding. Problems with multifamily occupancy of a dwelling unit.			
From Normal Growth and Development: Characteristics of normal behavior at all ages and stages of development.	People of all ages will be involved. Regression to earlier levels of bebehavior are to be expected.	Assists in provision of optimum physical and emotional environment. Helps arrange for and manage clinics, shelters, mass casualty centers. Becomes famil-	Management of psychologically disturbed.

Course Content	Knowledge Needed by and Role of Nurse in Disaster as Identified by:		
	Faculty	ANA	AMA
		iar with community. Interprets and reports personnel, social, and physical factors in environment affecting patient care. Participates in planning and carrying out nursing phases of community's survival plan. Maternal, child, and adult care; control and prevention of acute, chronic, and communicable disease; mental health, including psychiatric care; rehabilitation, accident prevention, and occupational health.	

Content in the Course "Nursing Care of Children" Relevant to Disaster Nursing

Course Content	Knowledge Needed by and Role of Nurse in Disaster as Identified by:		
	Faculty	ANA	AMA
Normal infant care: daily care health supervision breast vs. bottle feeding preparation of formula techniques of feeding addition of solids--vitamins	Health and welfare services Nurse's role and responsibility	Teaches and directs auxiliary and nonprofessional personnel to assist in teaching and supervising family members.	Management of normal deliveries (extended function, post-delivery).
Common problems of infants and children: unexplained crying colic constipation mild diarrhea rashes thrush cradle cap	Health and welfare services Nurse's role and responsibility	Participates in planning and carrying out nursing phases of community's survival plan, e.g., child health, prevention of communicable disease.	Administration of immunizing agents as directed. Diagnosis and treatment of minor illness.
Nursing care of premature infants: causes of prematurity prevention of prematurity complications of prematurity use of isolette methods of feeding-gavage prevention of infection maintenance of temperature importance of observation	Health and welfare services Nurse's role and responsibility	Insertion of nasogastric tubes to include gavage.	Insertion of nasogastric tubes to include gavage.

Course Content	Knowledge Needed by and Role of Nurse in Disaster as Identified by:		
	Faculty	ANA	AMA
Mental health in pediatrics: meaning of separation to a child fears of children understanding behavior discussion of mental health in terms of child development	Health and welfare services Nurse's role and responsibility	Management of the psychologically disturbed.	Management of the psychologically disturbed.
Fluid and electrolyte balance: electrolyte and fluid balance requirements in infancy and childhood diarrhea etiology signs and symptoms importance of early recognition and treatment complications and prognosis prevention	Fluid balance	Administration of whole blood and intravenous solutions as directed.	Administration of whole blood and intravenous solutions as directed.
Medications: special considerations in administering medicines to children	Nurse's role and responsibility	Administration of whole blood and intravenous solutions as directed. Administration of parenteral medications as directed.	Administration of whole blood and intravenous solutions as directed. Administration of parenteral medications as directed.

Safety factors and emergency equipment use of restraints crib sides need for identification of children administration of emergency oxygen to infants danger of overuse fire equipment emergency tracheotomy equipment suctioning of infants and children	Health and welfare services Safety factors in shelter program. Nurse's role and responsibility Improvised equipment	Ability to improvise. Ability to make appraisal of and plan for safest environment of occupants. Recording of essential data. May be expected to exercise her best judgment to initiate lifesaving and survival measures.	Attainment and maintenance of patent airway--emergency tracheotomy.
Use of massive radiation therapy in leukemia: effects on child care of child following therapy	Radiation syndrome	Treat symptoms of radiation sickness.	Assist physician in the triage--noting severe signs and symptoms of radiation injury following a nuclear detonation--priority IV.
Exceptional child: blind and deaf cerebral palsy mentally retarded causes and contributing factors prevention signs and symptoms problems faced by parents and child community agencies available importance of accepting child recognize potential educational training	Organization for disaster	Must accept and begin with existing situations, utilizing what is available to accomplish the most good for the greatest number.	Assist the physicians in the triage and priority process.

THE CORE UNIT

The reports of the seven area committees indicated that the faculty believed that preparation for disaster nursing involves a synthesis of the learnings that the student acquires throughout the curriculum, adapted for use in special situations that require more complex nursing skills. A sound foundation in general nursing was considered a "must," but the faculty thought that the student also needed an opportunity to identify from her past experiences the principles that are applicable in disaster nursing, to recognize her possible role in a disaster, and to develop depth of understanding and mastery of skills especially needed by the nurse in a disaster.

Accordingly, the faculty concluded that the best approach to the teaching of disaster nursing in the Massachusetts General Hospital School of Nursing would be through a core unit of instruction, the content of which would be built upon previous fundamental learnings.

This decision indicated two further tasks for the faculty: (1) the development of a core unit and (2) further identification of the specific foundational content being taught in other courses.

Placement of the Core Unit

The core unit was placed in the internship block, which is offered during the third, and last, year of the program. There were two major reasons for this placement. First, when the student begins her internship experiences, she has completed all the courses in which she acquires the learnings that are foundational to disaster nursing. Second, the competencies being developed by the student during this period are the same as or similar to those that a nurse would need during a disaster. During the internship, the student has opportunities to give nursing care that is comprehensive and that provides for continuity and, as a team leader, to assign and guide personnel with varying degrees of nursing ability. Emphasis is placed on the development of skill in interpersonal relationships and in written and oral communications and on the development of the ability to utilize clinical judgment and make sound decisions. These abilities and skills are obviously related to those that the nurse would need during a disaster.

A third reason for including the disaster nursing unit in the internship block was that a core unit on "Nursing During Disaster" had been included in this block for the past five years.

Objectives

The over-all objectives of the core unit were to assist the student to:

1. Develop a basis for accepting a philosophy that will permit her to function as effectively as possible during disaster.
2. Develop a better understanding of the meaning of mass disaster and the problem disaster creates.
3. Develop an understanding of the nurse's role in disaster and identify principles that the nurse can apply in meeting the situation, including helping others to assume their roles.

4. Develop behavioral, managerial, and mechanical skills that can be applied in a disaster situation.

Organization of Content

The content of the core unit was organized according to these five problems:

1. What is a disaster?

2. What plans are essential for survival in a disaster?

3. What is the role of the nurse in providing care for non-injured survivors in a disaster?

4. What is the role of the nurse in providing care which is essential for the survival of mass casualties?

5. What is the role of the nurse in a disaster?

Teaching Personnel

The unit was under the direction of the faculty member who was in charge of the senior nurse internship. She had had civil defense training and practical experience in disaster nursing and was also a nurse midwife. Personnel from related agencies involved in disaster care and leaders in the Massachusetts Civil Defense Agency and the Boston chapter of the American Red Cross served as visiting lecturers.

Teaching Methods

The teaching methods utilized included seminars, panel discussions, lectures, demonstrations, problem solving, practice periods, projects, and the use of audio-visual materials. A bibliography (not reproduced here) was provided for each section.

Content of Unit

The unit, as it had developed when the NLN project came to a close, was as follows:

Part I. What is a disaster? 3 hours

Objectives: To help the student to:

1. Develop a better understanding of a mass disaster and the problems it creates.

2. Identify agencies and community resources working for disaster relief.

3. Identify types and possible size and effects of wartime disasters.

4. Share her knowledge and experiences from which beliefs and generalizations can be incorporated into a philosophy about disaster.

Content	Method
Introduction to unit; acknowledgement of students who have experienced disaster as "resource" people in class.	Use of student inventory on disaster
What is disaster?	Question and answer discussion
Definition: Any event which disrupts a socio-cultural system is disaster.	
There are degrees of seriousness of a disaster.	
Criteria for determining degree of seriousness:	
number of people affected	
effect of impact on people	
size of area involved	
amount of destruction and disruption	
Disaster may affect individuals, groups, communities, cities, state, nation, or many nations.	
There are two main classifications: peacetime and wartime disasters.	
Peacetime disasters:	Discussion on recalled incidents or experiences of students
floods--Massachusetts 1955	
hurricanes--Florida	
droughts and famine--India	
fire--Cocoanut Grove, Boston	
blizzards--Buffalo 1958	Discussion of problems created by disaster
epidemics--poliomyelitis--Boston 1955	
train wreck--Swampscott	
plane wreck--Nantucket 1958	
earthquake--Bihar 1934	
tornado--Worcester	Student identification of commonalties
explosion--Texas	

Content	Method
Commonalities of disaster:	Summary by students
people injured or dead	
disruption of transportation, communications, electricity, water	
destruction or lack of needed supplies and equipment	
shortage or contamination of water, food, clothes	
collapsed buildings; homeless victims	
increased illness among non-casualties	
mass hysteria and/or panic	
broken families	
premature deliveries	
Disasters have specific dimensions of intensity.	
Phases: definitions and indications of how people act during these phases.	Discussion
pre-impact--steady, warning, threat	During warning/threat stage, obey.
impact	
post-impact--isolation, rescue, rehabilitation, irreversible change	Tornado rules--prevention
Spatial zones: total impact, fringe, filter, organized community aids	
Conclusion: Self-survival, buddy help, neighbor help are essential.	Discussion Assignment--Find out what your community offers in disaster.
Agencies:	
American Red Cross	
Civil Defense	
Salvation Army	
Hospitals and disaster plans	

Content	Method
General functions of:	
Red Cross in disaster--peace and war	American Red Cross--specific discussion
Civil Defense in disaster--peace and war	
Community agencies--public health services, public works, police and fire departments	
Civil Defense in wartime disaster would provide these functions also:	
communications	
warden	
rescue squads	
Public service functions for disaster relief when there has been preplanning and training	Film: "Disaster Strikes," American Red Cross
Summary of film	Discussion by students--health, welfare services of Red Cross in disaster
Are there implications for the nurse?	
Are there volunteers?	
What equipment of the American Red Cross was used?	
Résumé of community services, Red Cross services, and Civil Defense in peacetime disaster.	
Conclusion:	Group listing
What generalizations and beliefs can you accept as a working philosophy toward disaster?	
What enemy-caused disasters may occur in the U.S.A.?	
H-bomb--thermonuclear warfare	Question and answer
chemical warfare	
biological warfare	
psychological warfare	

<table>
<tr><th>Content</th><th>Method</th></tr>
<tr><td>Why are we vulnerable?</td><td></td></tr>
<tr><td>Berlin--Geneva Conferences
Communism--Near East, Far East, Africa</td><td>Questions on current events and foreign policies</td></tr>
<tr><td>Democracy is slow, with accent on individual.</td><td></td></tr>
<tr><td>Autocracy uses controls, with accent on good of state.</td><td></td></tr>
<tr><td>Thermonuclear: blast, heat, radiation</td><td></td></tr>
<tr><td>Atomic--fission=20kt. Hiroshima</td><td></td></tr>
<tr><td>H-bomb--fusion=1 megaton=50x a-bomb,
5 mgt=250x 20kt
20 mgt=1000x 20kt</td><td></td></tr>
<tr><td>Air, surface, or under-water burst</td><td></td></tr>
<tr><td>results of each</td><td></td></tr>
<tr><td>Note similarity to damage from explosion.</td><td>Discussion based on recall of injuries of victims of explosion</td></tr>
<tr><td>Difference--radiation: immediate and fall-out</td><td></td></tr>
<tr><td>Forms of contamination</td><td>Lecture</td></tr>
<tr><td>Dos and don'ts of decontamination</td><td>Chart on flannel board</td></tr>
<tr><td>Methods: decay
shielding agents
destructive agents
nondestructive agents</td><td></td></tr>
<tr><td>Number and types of casualties</td><td>Chart on flannel board</td></tr>
<tr><td><table><tr><th>Hiroshima A-bomb</th><th>H-bomb</th></tr><tr><td>B zone 50% dead
35% injured</td><td>50-85%
casualties</td></tr></table></td><td>Student project</td></tr>
<tr><td>Rule-of-thumb breakdown of surviving casualties
60% burns
50% mechanical injuries
15-20% radiation injuries
Most casualties will have a combination of injuries.</td><td></td></tr>
</table>

Content	Method
Summary:	
The H-bomb blast produces no new conditions for medical staff except the problem of dealing with such large numbers. Shock, burn, trauma, and radiation sickness have all been dealt with in routine work.	Poster (former student project)
Biological effects of ionizing radiation	Discussion of radiation as seen in hospital
Biological warfare:	
definition	
methods of using	
defenses against biological warfare	
six steps for survival in biological warfare	
Chemical warfare	
Two lethal gases may be employed:	Film: "Nerve Gas Casualties"
Nerve gas (G agents)	
Vesicant gases (mustard)	Discussion of film
Defense measures:	
warning unlikely	
detection, identification, protection	
preventive and definitive treatment after exposure	
decontamination	
Protective devices:	
shelters, masks, clothing, atropine, gas detection, kits	
Conclusion:	
What generalizations could you add to your philosophy?	

Content	Method
Segments of this unit usually applied to philosophy Discrepancy between number of casualties and medical personnel. Greatest good for the most people. Nurse must face inadequate supplies and equipment so she must improvise; chaos and little professional help, need for leadership; the nurse's judgment will not always be valid; she also will be shocked. Survival of individual. Plans for and training in survival after disaster. Public health problems and welfare needs in reception centers.	

Part II. What plans are essential for survival in disaster? 6 hours

Objectives: To help the student to:

1. Understand general organization plans, purposes, and functions of the Red Cross, Office of Civil and Defense Mobilization, and the Massachusetts Civil Defense Agency.
2. Understand how the organizations function together in disaster.
3. Understand medical care plans:
   Pre-impact plans
   Post-impact plans.
4. Identify the generalities which strengthen philosophy of disaster.
5. Identify nurse's role in plan.

Content	Method
Review the American Red Cross plans. Stress voluntary organization and services Government organization--National Plan Office of Civil and Defense Mobilization Purpose: To deter war or to prosecute the war successfully and to recover from it.	Chart on board

Content	Method
Expressed mission:	
Protection of life and property by preparing for and carrying out nonmilitary functions to prevent, minimize, repair, and recover from injury and damage.	
Mobilization and management of resources and production	
Federal government:	
directs, coordinates plans of total national effort.	
Massachusetts is in region no.1. The center is Harvard, Massachusetts.	
State:	
directs, coordinates activities for state.	
Local government:	Student assigned to explore her home community's action and to write a paper on her findings
Not everyone will be killed!	
Studies show a large majority will survive because the National Plan includes:	Use of pamphlet (each student has one): What You Should Know about National Plan for Civil Defense and Defense Mobilization, OCDM
warning for attack	
community plans for survival	
evacuation and shelter	
control and communication centers	
continuity of government	
radiological defense	
emergency government services	
Massachusetts Civil Defense Agency plans for disaster services.	
Casualty care and emergency public health, engineering, fire, police, rescue, welfare, transportation, communications and supplies.	
Massachusetts Civil Defense Agency center is at Natick, Massachusetts.	

Content	Method
You are a citizen and a part of the government. You have a responsibility for survival.	
What every citizen should know:	Demonstration with whistle in class
warning signals--what they mean and what to do.	
The community plan for action	Student assigned to explore her home community's action
Protection from radioactive fallout	In community and home, student should investigate possibility of inexpensive protection.
One member of each family should have first aid and/or home nursing course.	Discussion on what they are prepared to do
Conelrad--640 or 1240	Discussion--transistor radio
Emergency supplies and equipment each family should have	Discussion--What do you have in your home right now that could be transferred and used in your shelter?
You are expected to survive two weeks without help, therefore, you should:	Display of supplies
have food and water	Evaluate supplies
have shelter	
prepare for medical care beginning at home	
take sanitary precautions	
be self-reliant in fire-fighting	
have basic tools for rescue	
have tools and know how to remove light debris	
make arrangements for central point of contact in case of family separation	
have respect for law and order	
plan to help others: buddy and/or neighbor	

Content	Method
have knowledge of and cooperate with health authorities	
learn techniques of radiological, chemical, and biological warfare	Ask students to give three techniques for each area they have learned from other courses.
Are you and your family prepared?	Film: "Public Health Problems in Mass Evacuations"
Nurse has a responsibility now in community to rouse interest and impart information about Civil Defense.	Discussion of film in terms of self-survival and implications for nurses
	Distribute six pamphlets to each student; have her share them with neighbors.
Massachusetts--State plans	
Shelters:	
blast proof--one at Wilbraham, Mass.	
shelter against fallout	
shelter at home	
shelter areas as marked in city	Discussion--What kinds of places are marked "shelters"?
Summary:	
Write out the functions of the nurse as you see them now.	Assignment to small group--write up functions of nurse as you see them.
What generalizations can you add to the philosophy that will reinforce it?	List of generalizations to support or enhance philosophy toward disaster
Massachusetts has approved principles for emergency medical and nursing care. The plan for the flow of casualties is:	

Content		Method
place	function	Chart
scene of accident ←	rescue squads give emergency first aid and transport to	Disaster First Aid Station | nurses | function
First Aid Station → nearest scene of disaster	capacity for 1000 in 24 hours; supplies for 500; give initial professional care--transports casualties by priority to	
Emergency Civil Defense Hospital →	capacity for 200; essential rooms, equipment, supplies, staff records to give initial surgery and further emergency care for survival and arrange transportation	Emergency Hospital | nurses | function
Neighboring functioning hospital →	disaster plan operates to receive casualties for more definitive treatment	

Over-all role of the nurse:

- to help establish hospital
- to help with triage
- to manage with mostly untrained help
- to do on-the-job training and supervise care
- to function in emergency situations as needed

Content	Method
Massachusetts Civil Defense Act, Chapter 639 Act of 1950 provides for nurse to assume legally her role in disaster nursing.	Massachusetts General Hosp. Disaster Plan | student nurse intern | functions

Note similarities of principles in plan.

What are the plans of the school of nursing for disaster?

What is role of nurse?

Content	Method
What generalizations strengthen philosophy of disaster?	Film: "Lease on Life" Film: "Disaster Plan" Assignment--Study plans, supplies, equipment, and record Assign problem-solving situation.

Part III. What is the role of the nurse in providing care for the non-injured survivors in a disaster? 5 hours plus 2 hours on deliveries

Objectives: To help the student to:

1. Understand the basic health and welfare needs of non-injured displaced people.
2. Understand how non-injured displaced persons react in a disaster situation.
3. Understand the health and welfare services plan for the non-injured displaced person.
4. Interpret the role of the nurse in the plan, including her role in the delivery of newborn infants.

Content	Method
Where cities are evacuated, adequate sanitation safeguards must be provided along the evacuation routes and in reception areas. The Mass. Civil Defense Agency has classified health problems of evacuees under three phases: short-term problems which might be met en route to reception area. long-term problems encountered in settling evacuees. problems related to reoccupation of homes in target area.	Present short problem-solving situation. If you were an evacuee in this situation what would your problems be?
Welfare and medical services must plan together to help people meet the problems.	Distribute teaching tools.

Content	Method
Identification of short-term health problems.	"They work together to help the evacuee." Excerpt provided from: Office of Civil and Defense Mobilization, *The National Plan for Civil Defense and Defense Mobilization*, Annex 17, Disaster Services, pp. 4-6.
Bewildered with potential panic	
Weather factors, fallout hazards, etc.	
Hungry and thirsty	
Environmental sanitation	
Emergency medical care	
Mortuary services	
Adequate deployment of special groups	
Hospital patients, aged and chronically ill, pregnant women, infants and children	
Management planned by health services.	
Each family has its survival equipment	
Adequate information and instruction to evacuees	
Plan for adequate facilities to provide safe water supplies, sewage and garbage disposal, decontamination	
Adequate food supply and food sanitation	
Personnel and equipment for mortuary decontamination	
First aid and emergency medical care, emergency maternity services, and psychiatric services	
Public health nurse to work with welfare groups	Do both health and welfare services apply to the Mass. Civil Defense Agency plan of care for evacuees?
Mortuary service	
Long-term health problems at mass care centers or reception area (5000 people)	
Prevention and control of communicable disease	
Provision of safe environment	
Provision of decontamination services	

Content	Method
Provision of hospital facilities for evacuees	
Emergency delivery; care of newborn	
Supervision and care of infants and children	
Medical and nursing supervision of nonhospitalized casualties and the ill	
Care of aged and chronically ill	
Management of emotionally disturbed patients	
Maintaining health records	
Provision of mortuary services	
The plan is to have one public health nurse assigned to the welfare management team.	
A nursing team with many nonprofessional members	
Provision for initial health service plan to:	Film: "Public Health Problems in Mass Evacuation"
control and prevent contagious disease	
provide first aid and infirmary care	
expand existing hospital facilities	
expand and provide for safe water, food, milk; housing, sanitation, adequate sewage and garbage disposal, rodent and insect control	
provide emergency delivery service	
The evacuee will need psychological help. The nurse applies principles of psychological first aid now to people who are under stress.	Group problem solving What is the role of the nurse in providing care to the evacuee?
In disaster she will apply the same principles in different ways to the evacuees.	
There are five recognized types of reaction to disaster: normal reactions individual panic depressed reactions overly active responses bodily reactions	Discussion--How do you think you would react?

Content	Method
The four basic principles are:	
Accept every person's right to have his own feelings.	
Accept a casualty's limitation as real.	
Size up a casualty's potentialities as accurately and as quickly as possible.	Group problem solving
Accept your own limitations in a relief role.	How could you apply these principles in caring for the evacuees? List.
The wise application of these principles to the evacuees will contribute greatly to the prevention of disorganized mob activity.	
Summary:	
What is the role of the nurse in providing care for the non-injured survivors in disaster?	What do you see as your role?
(Compilation of two lists submitted under methods.)	
Does your philosophy about disaster permit you to accept this role?	

Objectives: Deliveries. To help the student to:

1. Understand the responsibility for deliveries that should be assumed by professional nurses and those that can be assumed by nonprofessional personnel when a physician is not available.

2. Prepare for the professional nurse's responsibilities.

Many infants arrive within a short period of time following the impact of the disaster. This statement is substantiated by the experience of the Red Cross. The bombings of Nagasaki and Hiroshima tell a similar story.

If proper care is available, approximately 90 percent of deliveries will follow a normal pattern, and both mother and infant will require little assistance. It is important for nurses to know this and to realize that the mother can meet most of her needs without any assistance. It is also important to appreciate the fact that a nonprofessional person may be of assistance to the mother.

Content	Method
Purposes of a delivery:	Discussion
1. To deliver a live baby.	
2. To prevent infection in mother and baby.	Discussion
First stage of labor	
1. Responsibilities of nurse or nonprofessional worker when physician is not available:	Discussion
a. Provide for meeting the mother's five needs:	
(1) Reassurance	
(2) Clean place to stay	
(3) Fluids	
(4) Void every two hours	
(5) Up and about until contractions come every 4 minutes.	
b. Get history of pregnancy.	
2. Other responsibilities of nurse:	Demonstration
a. Determine position of infant by palpation and auscultation of fetal heart sounds.	
b. Instruct mother and nonprofessional worker in care.	Role playing
c. Have available boiled scissors; cord tie; penicillin ointment or eye care solution.	
Second stage	
1. Keep mother's hands away from delivery area.	
2. Have mother lie on back, push with pain, pant in between, breathe hard through mouth.	Demonstration. Use over-bed table, two pillows, two hot-water bottles tied together to simulate labia, and chamois doll with placenta and cord attachment.
3. Protect mother's clothing.	
4. Note presenting part.	
5. Crowning--mother breathing hard through mouth.	Discussion

Content	Method
6. Deliver head and shoulders. Note if cord is around baby's neck. If so, loosen it gently and slip loop over head if possible.	
7. Try to hold baby so he will not fall into fecal-contaminated area between mother's legs.	
8. Invert baby to draw out mucus from airway.	
9. Milk throat.	
10. Wipe baby's mouth and nose with clean cloth.	
11. Place baby on mother's abdomen.	
Third stage	
1. If placenta does not come, stimulate uterus by massage.	
2. Wait for afterbirth up to 1 hour if necessary. (Cord will drop 4 inches usually.) If there are no sterile scissors and cord cannot be cut, wrap afterbirth and baby together.	
3. Milk cord; tie; cut.	
4. Dress stump.	
5. Put baby to breast.	
6. Label mother and baby.	Demonstrate labeling.
7. Put eye ointment on lower eyelids of baby.	

Part IV. What is the role of the nurse in providing care which is essential for the survival of mass casualties?

Objectives:

1. To create an awareness of the numerous complicated injuries of disaster victims.

2. To focus on nursing care essential for survival.

3. To motivate the student to assume more responsibility for self-directed learning.

4. To help the student to appreciate and prepare for her probable role.

Introduction to Triage, or Sorting

We need to summarize our beliefs here, because we will need our philosophy as we think of triage.

We have studied peacetime and wartime disasters; we have agreed that thermonuclear warfare would cause the greatest number of casualties and the greatest amount of destruction.

We have established the philosophy that we can't give the same kind of professional care when there are so many victims, so few professional personnel, and such limited equipment and supplies.

We agreed that we must give the kind of care that will do the most for the greatest number of survivors.

Triage, or sorting, is the key to management of mass casualties, because it is only by its means that casualties may be properly categorized and separated so there will be a minimal lag between injury and onset of therapy. Since sorting requires a high degree of professional skill in making clinical judgment or setting priority, all sorting should be done by the most mature surgeon who well knows what can be done for victims with the available help, supplies, and available care. It is therefore unlikely that a nurse would be in the position of having to sort victims at any time except for resuscitation and emergency medical treatment or as the doctor's co-worker in screening patients.

Objectives: Triage, or Sorting. To help the student to:

1. Understand sorting and priorities.
2. Understand principles applied to various categories of triage.
3. Appreciate needs of casualties and the situation in terms of giving the most to the greatest number of victims.
4. Understand how to assume her role in management so that as little time as possible is lost in starting emergency care for victims.
5. Recognize the possibility for error in clinical judgment.

Content	Method
Definition:	
Triage in the immediate post-impact period is the process of sorting the injured and ill on the basis of urgency, the seriousness of casualty's condition, and the probability of his survival with the type of care that can be given.	Class content is 1 hour.
In the event of nuclear disaster, there will be four categories of priority:	
40% of casualties will require minimal care. They are those who may return to work or go	

Content	Method
back to reception area after minimal treatment for 1)small lacerations or contusions 2)simple fractures of small bones 3)second degree burns of less than 10% not involving face or hands 4)mild shock 5)moderate emotional disorder These may be cared for by trained nonprofessionals on a clinic basis. They are the self-help or buddy-help group.	
20% will require immediate care. These injured will have highest priority for surgical care because a relatively short procedure will save their lives. Definite surgery can be delayed for those with: 1)hemorrhage from an easily accessible site 2)rapidly corrective mechanical respiratory defects 3)severe crushing wounds of extremities 4)a complete amputation 5)open fractures of major bones 6)burns 10-20% of body surface	Motivate students to evaluate emergency experiences on wards.
20% will be casualties whose treatment if delayed will probably lead to infection but whose life will not be jeopardized by delay 1)multiple lacerations without bleeding 2)closed fractures of major bones 3)noncritical central nervous system injuries 4)burns 20-40% of body surface	
20% of casualties resulting from explosion of nuclear weapon will be in expectant group. The expectant group consists of those whose operative needs would be so lengthy and complicated that to meet their needs would jeopardize the lives of several people in other priority groups. Casualties whose treatment will be expectant are those with 1)critical injuries of central nervous system 2)penetrating or perforating abdominal wounds 3)multiple severe injuries 4)severe burns of 40% plus	Ask students to evaluate needs of patients on intensive care unit and their ability to survive.
Identification of casualties: Use of Civil Defense Emergency tag is a mechanical part of triage and most essential.	Practice in class

Content	Method
Note use of: L for litter H for hemorrhage T for tourniquet	

Objectives: Shock. To help the student to:

1. Apply her knowledge of shock to the care of the mass casualties.

2. Recognize her responsibilities in giving nursing care essential for the survival of mass casualties in shock.

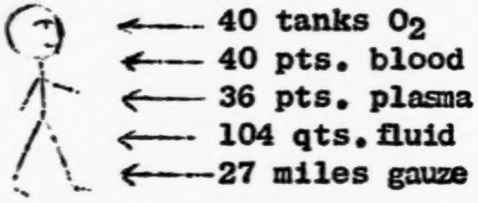
3. Understand some principles of management used in shock ward.

Content	Method
Definition of shock: A complex clinical syndrome of peripheral circulatory failure.	Class content is 1 hour. Why is it important to stress shock?
Shock may be expected after extensive crushing injuries, traumatic amputations, large or multiple hemorrhages, chest and abdominal trauma, burns, fractures, and irradiation syndrome.	
Onset may be immediate or delayed.	
Shock is due to a diminished blood volume as a result of loss of plasma (hypovolemic), a decrease in peripheral resistance (primary), or failure of the pumping action of the heart (cardiogenic).	
Symptoms.	Review
Nonprofessionals are taught this in the military; first aid; home nursing; etc.	Can lay people be taught to recognize symptoms?
Nonprofessionals can assist in the shock unit of the Improvised Hospital.	Why is it important to stress nonprofessionals here?
Principles in the treatment of shock:	
1. Consider degree of shock in assigning priority of treatment. Shock is not static.	
2. Stop bleeding. Tourniquet a last resort; used to save life at expense of probable loss of extremity.	How? Student demonstration. Can you teach lay people?

Content	Method
3. Relieve pain. Proper splinting; positioning. Use morphine with care. If necessary to use, administer IV.	How? Practice with training syrettes
4. Treat the injury.	
5. Restore blood volume. Choice is whole blood; plasma second; dextran third; electrolyte fourth. Dextran is usually available at First Aid Stations and for transport. Oral administration of electrolytes; soda and salt ½ teaspoon each to 1 qt. of water; good in case of burns for first two days.	
6. Trendelenburg position recommended unless contraindicated.	When is it contraindicated?
7. Maintain body heat by external warming if necessary.	
8. Reassure victim--may help neurogenic shock.	
9. In Emergency Hospital oxygen may be essential. Remember, maximum use of oxygen depends not only on a free and open oro-pharyngeal and tracheal airway but also on adequate circulatory blood volume.	
10. Casualty with uncontrolled bleeding should be quickly evacuated to hospital with treatment for shock en route.	
11. In hospital, keep careful estimate of intake and output. On-the-job training for lay person.	Assignment to group What would you need in shock unit? In hospital plan, where is the best place for shock room? How could you use lay personnel in shock room?
Can you support the philosophy of disaster? Can you identify nurse's role in disaster?	

Objectives: Burns. To help the student to:

1. Recall her knowledge and apply principles to the care of mass casualties with burns.
2. Learn to estimate seriousness of casualty in terms of degree and extent of burns, shock, and accompanying injuries.
3. Recognize criteria for sorting.
4. Plan for responsibilities of nursing care essential for survival of burned patients.
5. Understand some principles of ward management and delegation of responsibility.
6. Reinforce the philosophy of disaster.
7. Recognize the role of the nurse in disaster.

Content	Method
A fundamental concept in the treatment of burned casualties is "Certain compromises must be made."	Class content is 3 hours.
Reasons for changing concept:	
Burn is the most severe injury to which man is exposed.	Students discuss patients with burns they have cared for.
4-5 severely burned patients can disrupt routine of well-trained staff in a well-equipped hospital.	Diagram  40 tanks O_2 40 pts. blood 36 pts. plasma 104 qts. fluid 27 miles gauze 40% burns
Care of a severely burned patient requires prolonged assistance from well-trained team.	
Atomic Bomb--Hiroshima	
50,000 burns	
65% casualties--burns	
85-90% people coming to hospital--burns	
People two miles away received second degree flash burns	
95% burns due to infra-red and ultra-violet rays two seconds after explosion	Discussion--What is a flash burn?
5% due to fire	

Content	Method
In the U.S.A. in a moderately large city, if 20 mgt. bomb fell there would be circa 50,000 burns. If every doctor survived, he would have 100-500 burned patients to care for.	Equivalent to how many tons of T.N.T.?
If we kept present standards of treatment and if we had 34,000 burned patients:	
170,000 doctors and nurses (pop. of New Haven) 8000 tons of supplies $10,000,000	
Accepted: we must modify present concept of treatment of burns.	
Burns in disaster are often complicated by lacerations, crush injuries, or fractures.	Discussion--What do you treat first on site of rescue? Why?
Management of burn casualties Evaluate seriousness of burn Depth of burn/severity first degree--erythema, edema, pain	Give student emergency medical card--she is rescue worker--victim has 10% flash burns weighs 160 lbs.
second degree--blisters, pain third degree--charring of skin, deep through derma, little pain	Slit constricting clothes --p.r.n. examine for shock and other injuries --give first aid as necessary
Degree of burned surface/extent of burn head--9% one arm--9% one leg--18% ½ trunk--18% neck or genitalia--1%	Record severity and extent of surface and respiratory tract burns.
Sorting or classification of burns	Sketch in burned area.
Self-care = 15% or less, except for second or third degree burns of face, neck, or hands. Rx--give salt and soda--1-½ teaspoon of each in package (usually 6 for a man because of weight)--give 1 qt. bottle if he has none--1 pkg. to 1 qt.--3 qts. each day.	Note agent causing burns and other injuries. Record treatment given. Send on foot to First Aid Station.
Dress burns or leave open according to judgment.	

Content	Method
Immediate treatment: 15-40% body burns Possibility of death increases as % increases Take to First Aid Station At First Aid Station	Fill out emergency medical tag on this victim with 30% burn, weight 160--same as self-care except morphine ¼ grain probably necessary--cover with clean dressing for transportation.
First Day After assessing shock, wound care, fluid replacement started I.V.	
1)plasma/plasma expander (dextran) 2)dextrose in saline in water if not tolerated by mouth 3)dextrose in water if not tolerated by mouth	Record dextran I.V. amount on card
How much will be needed? formula first day--% body burn times weight in kilos (this victim--30x73) dextrose ------------ 2160 saline and glucose -- 2160 + glucose in water -- 2000 cc 6320 cc	
sodium and glucose --- and --- glucose in water may be given p.o.	What amount?
rate give ½ in first 8 hours give ½ in next 16 hours	Same as shock p.o. ½ tsp. salt and soda to 1 qt. of water ½ amt. = 3160 cc
Give blood, plasma, or I.V. fluids if patient is vomiting or has other complications.	Record time, kind, and amount of fluid given and rate on card.
No more than 15 mgm morphine in 4 hours	15 mgm = _____ gr.
give antibiotics--procaine penicillin G 300,000 units IM	
Priority transportation to Emergency Hospital	How if First Aid Station set up?

Content	Method
At Emergency Hospital	Where is triage area in hospital?
Re-evaluate condition of casualty--burns and other injuries.	Requirements for triage area
Place in burn unit.	Start hospital chart.
Continue fluid replacement up to 6320 cc as ordered.	Where should burn unit be?
	What does it need to have in equipment?
Lay person can be taught to change disposable I.V. sets.	What can lay person do?
He can chart.	
Select local dressing.	
Occlusive: Civil Defense burn good for arms and legs.	Demonstrate
Disadvantage--time-consuming to apply--not always available--must be changed at regular intervals or invasive infection will occur	Why? Capillary action
Exposed--used for face or perineum or on burns.	If nurse makes choice she must use clinical judgment or use what is on hand.
Victim does not lie on.	
Disadvantage--not all burns can be adequately exposed.	
Moderate discomfort for 48 hrs.	
Exposed treatment requires warm, clean environment free from insects.	
N.B. A minimal amount of cleansing with soap and water and rinse with normal saline. If dead skin is removed, infection will be reduced.	
Insert indwelling catheter for casualties if:	
shock	
comatose	
perineal burns	
20% burns or more	

Content	Method
Response to fluid therapy evaluated by output of patient.	Why?
25-30 cc urine in one hour = adequate fluid replacement	
75 cc urine in one hour = too much fluid	
15 cc urine in one hour for three hours = too little flow or renal failure	
blood in urine usually means renal failure	
lay person	Who can watch and record this?
Chemotherapy	Learn chart on page 58 of Disaster Manual for Nurses Mass. Civil Defense Agency.
Give prophylactic dose on following casualties up to 7 days if supply permits.	
moderate to severe burns	Charge nurse may be told to initiate antibiotic of choice.
burns with injuries which might become infected	
burns of or near perineum	
respiratory tract burns	
casualties with indwelling catheters	
Administer antibiotic according to reports of sensitivity tests. If sensitivity testing not available, administer broad spectrum antibiotics.	
Tetanus prophylaxis--give first day	Role playing
Second Day	
½ of same fluids in same rates	How much of each?
second day--dextrose ------- 1580 cc saline --------- 1580 cc 5% dextrose in water --- 1000 cc 4160 cc	How much given first 8 hours? 1580 cc

Content	Method
Third Day	
Urine output determines amount of fluids	Who should determine this?
Coagulum has begun to form. There is a change from acid toward alkalie when this occurs.	Why?
Symptoms of infection usually do not manifest themselves until 7-14 days post-burn. Victim may be transferred to a functioning hospital for definitive care by then.	
Minimal care in addition to that cited above: Observe carefully for:	Role playing. Tell lay person what symptoms to observe.
1. Symptoms of shock	
2. Symptoms of pulmonary edema	
3. Tight bandages	
4. Cracks in eschar of uncovered burns. (Usually due to infection. Debride cracked area by rubbing with sterile gauze.)	Demonstrate.
Lay person can reassure victims, encourage them to drink, eat.	
Expected treatment--over 40% body burns	
They must be examined by doctor. Sedation/analgesia given as required. Moved to holding unit. Third priority	Record all treatment on card.
Respiratory tract burns	
High mortality unless treated early - priority in field, First Aid Station, hospital	
Symptoms:	
Mild injury: sore throat, coughing, hoarseness	Films: "Management of Burns: Parts I & II"
Severe Injury: cyanosis, dyspnea, early laryngeal obstruction, râles	

Content	Method
Treatment: Suction Positioning for drainage of secretions Avoid over-sedation Oxygen therapy Tracheotomy - if indicated	

Objectives: Fractures. To help the student to:

1. Apply scientific principles in the care of patients with fractures.
2. Develop her knowledge concerning the use of improvised equipment in immobilizing various fractures.
3. Learn how to suitably transport patients with fractures.
4. Improve her skill in handling equipment and thus strengthen her ability to teach other personnel.

Content	Method
In nuclear warfare 10-20% of casualties will be fractures. One large civilian area bombed will give 100,000 fractures.	Class content is 1½ hours.
First 48 hours after bombing will be application of first aid measures only.	What are the purposes of splinting?
All civilians should have first aid preparation.	What principles do we apply in splinting?
Stress simple splinting, dressing wounds, control of hemorrhage.	
Priority of fractures in relation to total wounds	Review signs and symptoms of fractures. Types of fractures.
General condition of victim evaluated by doctor.	
Priority of fractures: Associated vascular injury Marked fracture displacement which accentuates shock Severely infected by anaerobes Open fracture of hand Major fractures requiring operative procedure associated with severe body irradiation.	

Content	Method
Since fractures are low in priority, for lifesaving efforts, uncomplicated fractures are very low in priority of treatment. Open fracture Closed fractures with severe displacement or nerve injury Routine closed fractures will have first aid, some sedation, and may wait at least a week without danger.	
Emergency care of closed fractures:	
Skull--Treat as brain injury.	Demonstration
Position: prone, face to one side. Maintain airway.	Practice
Barbiturate for restlessness--NO NARCOTICS. DO NOT ALLOW TO WALK.	
Neck (cervical)	Demonstration
Immobilize by high collar (5 inches high in front) of newspaper.	Practice
This raises chin and arches back. Immobilize head.	
Jaw--May be serious Emergency measures: Control hemorrhage. Clear and maintain airway for respiration. Stabilize parts.	
Shoulder, arm, and elbow	Demonstration
Apply sling with elbow at right angle. Bind all to body with circular bandage.	Practice
Forearm, wrist, and hand.	Demonstration
Immobilize with newspaper splint. Place in sling with elbow at right angle.	Practice
Spine--dorsal, lumbar	Demonstration
Do not move until board stretcher is available.	Practice
Position While waiting: prone with face down and support under head or knees. On stretcher: Place roll or blanket or substitute 4 inches thick where injury will be when victim is rolled on litter. Place victim: prone with head to one side or flat on back with pillow under small of back. DO NOT LET HIM SIT UP. Hard, rigid surface Relieve pain, record drug, dose, time.	Film: "First Aid for Fractures: Skull, Spine, Pelvis"

Content	Method
Pelvis	
Transport on stretcher.	Demonstration
Place belt or muslin bandage around pelvis.	
Watch for rupture of urethra or bladder--bloody urine.	Practice
Hip--femur	Demonstration
Thomas splint if available.	
Splint from armpit to ankle with board or tie legs together.	Practice
Relieve pain. Record drug, dose, time.	
Lower leg	Demonstration
Splint fracture from hip to ankle.	
Simple splint for ankle and foot fracture.	Practice
Relieve pain. Record drug, dose, time.	
Sprains	Demonstration
Symptoms: deformity of joint, inability to move joint, and pain over joint. Swelling, discoloration over joint. Symptoms of shock.	Practice
Treatment: Elevate and support part to reduce discomfort. Cold compress to deformity. Splint after reduction for some time.	
Compound fractures	Role playing
Treat compound fractures the same as closed fractures plus:	
Dry sterile dressing.	
Penicillin 300,000 units stat and repeat daily for three doses.	Ask victim about sensitivity.
Relieve pain. Record drug, dose, time.	
Tetanus prophylaxis.	
Conclusion: It should be our purpose to keep as many victims out of the hospital as is possible.	

Objectives: Wounds. To help the student to:

1. Apply principles of surgical nursing to nursing care essential to survival of casualties with wounds.

2. Pinpoint emergency care.

3. Practice safe transportation.

4. Identify and accept role of nurse in care of casualties with wounds.

Content	Method
Wounds in nuclear warfare may occur in more than 50% of casualties.	Class content is 1 hour.
For review, we shall divide them into three classifications excluding burns: soft-tissue injuries, chest injuries, and eye wounds.	
General principles that apply to all wounds: Stop hemorrhage, insure adequate respiration, relieve shock, control infection, reassure victim, give tetanus prophylaxis.	
In soft-tissue injuries it may be necessary to apply a hemostat to a bleeding wound and tie off.	Review--Stop hemorrhage --Student demonstration of four ways Student demonstrates with large cord and ties off with silk. Square knot! Practice
Injuries of chest are always serious. If untreated, shock and death may follow quickly; e.g., collapse and displaced trachea.	Review--Insure adequate respiration--Remove blood, mucus, or debris from mouth. Student demonstrations
How do you recognize chest injuries?	
Sucking wounds of chest--high priority for care.	Film: "Sucking Wounds of the Chest"
Symptoms:	Record what caused wound.
Sucking or bubbling sound Shock Gasping respiration or rapid respiration Hole in chest	
Emergency treatment:	
Close sucking wound stat. Plug hole tightly. Gauze pad preferred--otherwise handkerchief, tie, bit of shirt, etc. Bandage around and into place, or seal if you have tape.	
Relieve pain. Clean mouth of debris, blood, etc. Transport to First Aid Station.	What is maximum dose? ¼ gr. morphine q 4 h Narcotic--record dose and time on card. What position? Demonstration

Content	Method
At First Aid Station:	Review first aid setup
Cleanse area. Replace gauze. Do immediate occlusive dressing. Relieve pain. Record dose, drug, and time.	Student demonstration with syrette
Priority to Emergency Hospital.	
Admission. Prepare for immediate surgery.	
Intra-thoracic injury priority Transportation of casualties requiring constant chest aspiration. Use large-gauge needle only. Arrange on stretcher slightly sidewise so needle does not touch emesis basin. Splint with pillows or blankets. Fasten patient in place with blanket or sheet around chest.	Demonstrate position.
Management of soft-tissue injuries	
Emergency care.	Film: "Debridement, Soft Tissue Wounds"
Types--closed and open.	
Priority care from scene of accident. Intra-abdominal wounds. Wounds of extremities requiring tourniquet. Head and spinal cord injuries. Severe crushing or lacerations.	Mark T on emergency medical card giving tourniquet location and time.
At First Aid Station: Give priority. Re-evaluate wounds. Doctor evaluates need for tourniquet. Cleanse area with water if available. Apply dry sterile dressing EXCEPT IN INTRA-ABDOMINAL WOUNDS use warm saline. DO NOT REPLACE ORGANS. If serious, give morphine, EXCEPT IN HEAD INJURY give penicillin.	What amount? Student demonstrates with syrette. Mark on emergency medical card.
Transportation: Splint sides with blankets, crushed or severely lacerated area with blankets. Keep in alignment.	Demonstrate position.
Head and spinal cord. Do not bend neck; transport face up. Brace head at sides.	Demonstrate position.
If unconscious, place on side or back with head to side.	Recall recovery room experience.

Content	Method
Blast causes chest to cave in (compression injuries).	
Fractured ribs usual and bilateral pulmonary hemorrhage.	
Symptoms and signs: Little external evidence Shock Cyanosis Difficult breathing Spitting blood or bloody frothy sputum	Why? Ribs broken, when victim breathes he gets "flail motion."
Emergency treatment: Fasten chest to stretcher with coat over midline, or strap over midline in front and behind.	
Principles of emergency medical care	
Lies on injured side. If severe dyspnea he may set up on stretcher.	
Nothing by mouth. No morphine. In First Aid Station relieve chest pain with intercostal block--the doctor will do.	
At Emergency Hospital:	
Assess for deep injury. Cleanse and shave hairy part. Debride. Apply sterile dressing--immobilize injured part. Continue penicillin. Tetanus prophylaxis. Delay closure 4-10 days except for face and hands.	What is surgical unit like? Where is it placed?
Severe scalp wound--emergency care at First Aid.	
Cover scalp wound with sterile gauze. Transport.	Demonstrate position.
At Emergency Hospital.	
Shave, clean, look for foreign body. Close wound. Apply dry sterile dressing. Give penicillin, tetanus prophylaxis. Treat shock. Remove dressing only for bleeding or removal of sutures.	

Objectives: Irradiation Syndrome as a Result of Nuclear Disasters. To help the student to acquire understanding of:

1. Irradiation syndrome in man.
2. Radioactive fallout and the extent of its dispersal.
3. Protection from initial radiation and radioactive fallout.
4. Civil Defense classifications of minimum permissible exposure to radiation.
5. The mechanism of action of gamma radiation and probable effects in man.
6. The nurse's role in sorting and treating individuals exposed to radiation in disaster.

Content	Method
Define irradiation syndrome as condition resulting from total body exposure to nuclear radiation.	Class content is 1½ hours. Questions and discussion drawing on students' past experiences with and knowledge of peacetime uses of and protection from radiation such as: x-ray therapy radium implantation use of RAI RA gold
Number of people who might be affected and terminology. Meaning of: radioactive fallout gamma radiation ½ life electromagnetic spectrum roentgens initial radiation decontamination monitoring	Discuss
How does fallout occur?	Diagram--Point out different effects with surface explosion and explosion high in atmosphere.
Factors affecting fallout pattern, such as weather, surface involved.	Questions and discussion, drawing on past experience when possible. Use pamphlets showing maps and weather effects.

Content	Method
Protection from radiation. time distance mass shelters	Ask where and how students used these principles before (probably in caring for patients with ra implant).
Decontamination--how and why carried out.	
Minimal permissible exposures to radiation.	Ask students if they note practicality of classifications and how they react to them.
Radiation effects on body structures such as bone marrow. Stress: the earlier symptoms appear, the poorer the prognosis.	Ask first where they have seen these before. Use of charts pointing out symptoms and when they might occur in relation to time.
Nurse's role in sorting and treatment. Treatment at: rescue point First Aid Station and forward treatment centers hospital	Discuss
	Ask class to break up into groups and formulate broad principles of care of irradiation victims. Use situation. Ask students how they would organize to meet the disaster cited.

Part V. What is the role of the nurse in disaster? 2 hours

Objectives: To help the student to:

1. Synthesize those concepts about the roles and functions of the nurse to which she has been introduced in the preceding classes.

Content	Method
The professional nurse has a role as a citizen in addition to her many roles as a nurse in a disaster. She has the responsibility for her own survival and the survival of her family and for helping others gain insight into and knowledge of their responsibilities for survival.	Discussion

Content	Method
She will have varying degrees of administrative, organizational, supervisory, teaching, and nursing responsibilities.	
The nurse should be prepared to:	
1. Manage large wards with little or no professional assistance.	Group discussions based on simulated situations
2. Organize under chaotic conditions. She must have an understanding of human reactions in stress situations.	Identify 1 through 7 from group reports. List on board.
3. Utilize volunteer help both trained and untrained.	
4. Apply concepts of public health nursing to the situation to the best of her ability.	
5. Develop nursing care procedures and programs.	
6. Use her clinical judgment in assessing the situation, initiating action and following through to the best of her ability.	
7. Readjust her standards of professional nursing in order to provide minimal essential care for the greatest number in order to save life and limb.	

FOUNDATIONAL CONTENT

The seven area committees then identified specific content in other courses that would serve as a foundation for the content in each of the five parts of the core course. The topical content that was identified for Part IV of the core course is shown here.

Specific Content in Preceding Courses Which Serves as a Foundation for Part IV of the Core Unit Nursing During Disaster

PART IV: What Is the Role of the Nurse in Providing Care Essential for the Survival of Mass Casualties?

Year	Course and Content	Topical Content in Part IV					
		Triage	Shock	Burns	Fractures	Wounds	Irradiation
1st	MEDICAL-SURGICAL NURSING						
	Preoperative care Common preoperative medications Preoperative and operative records Physical preparation of patient - skin, bowels, etc. Consideration of the emotional factors in a patient undergoing surgery	*	*	*	*	*	
	Common anesthetic agents Local, regional, general		*	*	*	*	
	Postoperative care Use of suction Maintenance of fluid and electrolyte balance Intravenous therapy Principles of surgical asepsis Care of wounds Use of antibiotic and chemotherapeutic agents Postoperative complications including prevention and treatment	*	*	*	*	*	
	Nature of inflammation			*	*	*	*
	Wound healing	*		*	*	*	*
	Administration of medicines - oral, subcutaneous, intramuscular (includes practice)		*	*	*	*	

Year	Course and Content	Topical Content in Part IV					
		Triage	Shock	Burns	Fractures	Wounds	Irradiation
1st	MEDICAL-SURGICAL NURSING						
	Care of patients with surgery of mouth, neck, and associated problems. Use of tracheotmy as "supportive" and therapeutic measure	•		•	•	•	
	Shock Etiology Symptomatology Treatment	•	•	•	•	•	
	Burns Prevention Classification Types Pathology and symptoms Treatment Nursing Care	•	•	•			
	Acute renal insufficiency	•	•	•		•	
	Effect of radiation on body tissues Signs of mild radiation sickness Radioactive iodine - tracer and therapeutic doses	•					•
	Anaphylaxis and serum sickness Tetanus antitoxin as possible cause		•	•	•	•	
1st	MICROBIOLOGY						
	Tetanus - Clostridium tetani Activity of organisms			•	•	•	

	Conditions of growth Tetanus prophylaxis						
	Gas gangrene - Clostridium organisms Conditions of growth Wound contamination			*	*	*	
1st	CHEMISTRY						
	Water and electrolyte balance	*	*	*	*	*	*
1st	INTRODUCTION TO NURSING						
	Admission of patients to clinics, wards Techniques of observation, interviewing, recording	*	*	*	*	*	*
	Planning and organizing patient care Utilization of resources Nursing measures versus doctor's orders Standing orders	*	*	*	*	*	*
	Determination of and provision for physical, emotional, and spiritual needs	*	*	*	*	*	*
	Principles of teaching (patients and families)		*	*	*	*	*
	Adapting nursing care to the individual patient Applying scientific principles Use of equipment Adaptations in the home		*	*	*	*	*
	Posture and body mechanics Positioning, lifting and transporting patients		*	*	*	*	*
2nd	FIRST AID						
	Each unit of the course contributes to the students' understanding of the conditions or injuries which are manifested by victims of a disaster.	*	*	*	*	*	*

Year	Course and Content	Topical Content in Part IV					
		Triage	Shock	Burns	Fractures	Wounds	Irradiation
1st and 2nd	ANATOMY AND PHYSIOLOGY						
	Each unit of the course contributes in some measure to the student's understanding of the conditions or injuries which are manifested by victims of a disaster.	*	*	*	*	*	*
1st and 2nd	NUTRITION and DIET THERAPY						
	Dietary modifications in disease			*	*	*	*
2nd	NEURO-ORTHOPEDIC NURSING						
	Injuries of musculo-skeletal system Types Evaluation of injury Splinting Casts - application and care Traction - application and care	*	*		*	*	
	Injuries to the central nervous system Types Evaluation of injury Care of the unconscious patient Maintenance of an airway	*	*		*	*	
2nd	EYE, EAR, NOSE, AND THROAT NURSING						
	Foreign bodies in eyes Effects Removal (classroom practice in eversion of eyelid)	*				*	
	Burns of the eye (eye irrigations)	*		*			

2nd	NURSING CARE OF THE AMBULATORY PATIENT						
	Improvised equipment, Procedures adapted to home facilities.		*	*	*	*	*
	Basic procedure for venipuncture (discussion and practice)		*	*	*	*	*
2nd	PEDIATRIC NURSING						
	Pediatric emergencies						
	Methods of resuscitation - mouth-to-mouth rescue breathing and intubation		*	*	*	*	
	Principles involved in doing an emergency tracheotomy		*	*	*	*	
	Fluid and electrolyte balance	*	*	*	*	*	*
	Special considerations in administering medicines to children		*	*	*	*	*
	Cancer in childhood Bone marrow transplant Total body radiation	*					*
1st	GYNECOLOGIC NURSING (integrated in MEDICAL-SURGICAL NURSING)						
	Nursing needs of patients treated with radiotherapy	*					*

EVALUATION

The achievement of the students with respect to disaster nursing knowledge was evaluated by their performance in group work, in conferences, on the NLN Achievement Test in Disaster Nursing, and on teacher-made pencil-and-paper tests.

The effectiveness of the core unit, specifically, was measured by an examination on specific areas of knowledge about disasters which was given to students before and immediately after they took the unit. To determine the extent to which students had retained their learnings, this examination was also given six months after the completion of the unit to some of the students who, upon graduation, were employed by the Massachusetts General Hospital.

Table 4 shows the results obtained from pretesting and post-testing a group of 32 students. It would appear from these data that learning had taken place among this group with respect to all the topics tests, but that progress had been greatest in those areas in which the students' original knowledge was most limited.

As an assignment for the last class of the unit, every student was asked to consider the objectives of the unit and to prepare a written evaluation of the unit in terms of these objectives. In addition, the student was asked to state frankly her reactions to the content and teaching methods.

The data obtained from these reports were classified and used as a basis of discussion with the student group during the evaluation period. During this discussion period, the students were encouraged to express the feelings that they had had about nursing during disasters at the beginning of the core unit and those that they now had at the end of the unit. To deepen the students' insights into their own reactions, each was encouraged to identify the point at which she had noted a change in her attitude.

Table 4. Percentage of Correct, Partially Correct, and Incorrect Answers Made by 32 Students on Test Given Before and at End of Core Unit

Topics	Pretesting			Post-Testing at End of Unit		
	Percentage of Answers			Percentage of Answers		
	Correct	Partially Correct	Incorrect	Correct	Partially Correct	Incorrect
OCDM Functions	70	20	10	80	14	6
Warning Systems	28	44	28	84	12	4
Public Shelters	60	29	11	85	9	6
Radiation Protection	49	30	21	85	13	2
Fallout (added in post-testing)	--	--	--	100	--	--
Irradiation Syndrome	20	50	30	89	8	3
Treatment	13	30	57	97	--	3

As an aid in evaluating all of the learning experiences in the curriculum with respect to the extent to which they had contributed to the students' preparation for nursing in a disaster, 35 students were asked to rank the various courses or subdivisions of courses according to the knowledge they had acquired about specific topics, such as triage, anesthesia, and radiation sickness. A compilation of these ratings indicated that the core course contributed to the students' knowledge of every one of the subjects and was regarded as the number-one contributor with respect to most of them. The medical-surgical nursing courses ranked second in the number of disaster nursing subjects to which they contributed, the first aid course third, and the natural science courses fourth. The opinions of the students about the relative contributions of these courses matched the objectives that had been planned by the faculty.

From the results of these various evaluation devices, it might be concluded that, although improvements in the teaching of disaster nursing would undoubtedly be made, the plan originally set up and implemented by the faculty was a sound one and suitable for the program offered by the Massachusetts General Hospital School of Nursing.

DEMONSTRATION IN THE BACCALAUREATE BASIC PROGRAM OF THE UNIVERSITY OF MINNESOTA SCHOOL OF NURSING

GENERAL DESCRIPTION OF THE TOTAL PROGRAM

The School of Nursing of the University of Minnesota is one of the schools of the College of Medical Sciences. The faculty describes its educational philosophy as "a democratic philosophy of education with its concept of the social role of education in a democratic society, its emphasis upon the inherent worth of the individual and the dignity and value of human life, and its acceptance of the task of building free citizens who strive not only for their own rights and liberties but for those of others who assume the responsibility and obligations of free citizenship."

The School of Nursing conducts four types of programs in nursing: a program in practical nursing, a program that leads to a baccalaureate degree for students with no previous preparation in nursing, programs that lead to a baccalaureate degree for graduate nurses, and programs that lead to a masters degree. The first two of these programs--the practical nursing program and the baccalaureate basic program--participated in the project. The instructors in these two programs planned and worked together during the study.

The baccalaureate basic program is designed to prepare nurses for beginning positions in professional nursing under supervision in all areas.

The curriculum consists of 16 quarters, 10 of which are in the nursing major. The student has clinical experience in the care of mothers, babies, children, and medical and surgical patients at the University hospitals. Many other community agencies are used for observation and experience, particularly in the field of public health nursing.

It is suggested that the following courses be taken during the 6 quarters that the student spends in the College of Science, Literature, and the Arts:

First Year

English (3 qtrs.)
Zoology (3 qtrs.)
Sociology or social science (1 qtr.)
Physical education (3 qtrs.)
Electives

Second Year

Inorganic chemistry (2 qtrs.)
Psychology (2 qtrs.)
Sociology or social science (2 qtrs.)
History or political science or economics (2 qtrs.)
Public health (1 qtr.)
Physical education (2 qtrs.)
Electives

At the time of the NLN project, the course requirements for the major in basic professional nursing were:

		Quarter Credits	Weeks of Clinical Assignment
	Third Year (4 quarters)		
Anat 4	Elementary Anatomy	5	
Bact 53	General Bacteriology	5	
Phcl 9-10	Pharmacology	4	
Ph Ch 50	Physiological Chemistry	4	
Phsl 51	Human Physiology	6	
H E 72	Nutrition	2	
Nurs 17-18	Introduction to Clinical Nursing	12	Selected Experiences
Nurs 50-51	Medical and Surgical Nursing	24	24
Nurs 52	Nurse-Patient Relationships	3	
Nurs 54	Pathology	2	
	Fourth Year (4 quarters)		
Pub H 53	Introduction to Public Health	5	
Nurs 56	Nursing in the Operating Room	6	6
Nurs 58	Orthopedic Nursing	2	2
Nurs 59	Gynecologic Nursing	4	4
Nurs 60-61	Maternal and Child Health Nursing	24	24
Nurs 66	Neuropsychiatric Nursing	4	
Nurs 67	Nursing Care of Neuropsychiatric Patients	8	12
Nurs 98	The Nursing Profession	3	
	Fifth Year (2 quarters)		
Pub H 62N	Public Health Nursing 1	3	
Nurs 79	Tuberculosis Nursing	3	2
Nurs 87	Field Experience in Public Health Nursing	10	10
Nurs 88	Rural Nursing	5	4
Nurs 95	Orientation to Nursing Management	5	4
Nurs 96	Nursing in the Outpatient Department	5	4

PHILOSOPHY OF DISASTER NURSING

The faculty in nursing of the University of Minnesota accepted the statement of belief that was prepared at the beginning of the study by the project directors and key faculty members of all the participating institutions as the framework for content identification and curriculum analysis.

> The role of the professional nurse in natural or enemy-caused disaster is to adapt nursing care with respect to lifesaving and health maintenance to situations where the number of people needing care and treatment greatly exceeds the number of prepared people available, and where supplies, equipment, physical facilities, and utilities are limited.

IDENTIFICATION OF CONTENT

To determine what content the faculty would agree was essential for inclusion in the program, each faculty member was given a checklist of possible functions of a nurse during a disaster. The items on this checklist were derived from the subject matter studied in the faculty inservice program. A compilation of the answers on the checklist served as a guide in determining what content should be included somewhere in the curriculum.

To investigate to what extent preparation for nursing in a disaster was being or could be included in the existing courses in the curriculum, the following list of 20 questions was given to each nurse faculty member:

1. What would be the nature of disasters that relate to your specialty area?
2. What are the types of uninjured victims whose care would come under the scope of your area?
3. What are the types of injured victims?
4. What are the aspects of lifesaving measures and emergency care that belong in your specialty area?
5. Are there opportunities for including principles of sorting and treatment priority in teaching care of disaster casualties?
6. What specific nursing procedures relate to the care of disaster victims?
7. Is the student introduced to the criteria for essential nursing that would be used in a disaster situation?
8. What improvisation of supplies and equipment is included in teaching patient care in this area?
9. Is the nurse prepared to carry out disaster treatment within this area with little or no medical supervision?
10. Are there approved standing orders that may be used in disaster care for patients in your specialty area?
11. Is there an opportunity for developing an understanding of problems related to administering disaster nursing services?
12. Are there opportunities for teaching families, lay persons, and auxiliary personnel to carry out procedures and give nursing care with little or no supervision?
13. What preventive or protective measures might be included in your area relative to patient safety in a disaster situation?
14. Do the students' experiences in your clinical area contribute to their emotional preparedness to work in a disaster situation?

15. What psychological problems of disaster victims come within your specialty area?

16. What contribution does your specialty area make to the student's understanding of the public health aspects of disaster situations?

17. What are the problems of shelter living that relate to your area?

18. What contacts with other agencies, organizations, etc., does your course afford that could be utilized for emphasis on disaster preparedness and planning?

19. Are there opportunities for student projects relating to disaster nursing?

20. What bibliographical references in disaster nursing are made available to your students?

PLACEMENT OF DISASTER NURSING CONTENT

The data compiled from the questionnaire were studied by a group consisting of the project director and instructors from each clinical area. The results of this group's discussions were referred to the Curriculum Committee of the baccalaureate degree program. Decisions as to the inclusion and the placement of content rested with this committee.

The decisions about the content to be included were influenced by the faculty's belief that all citizens should be prepared in first aid at the level taught in the Red Cross course. Accordingly, the presentation of a current Red Cross First Aid Certificate was made a requirement for admission to the nursing curriculum. It should be noted, however, that many students take this course during the first two years of the total educational program in nursing, either in the Physical Education Department of the University of Minnesota or in another liberal arts and science college.

From the information collected on the questionnaire, it seemed apparent that the rest of the disaster nursing content deemed essential by the faculty could be included in the nursing curriculum in two ways:

1. Through utilizing learning experiences already in the curriculum to emphasize how the knowledge and skills being taught would be applied in disaster situations.

2. Through introducing within the curriculum three series of sessions focused on disaster nursing. In the placement of these three series, or "disaster blocks," account was taken of the content that the students had had or were having in previous or concurrent courses, and the sessions were interspersed with classes in the concurrent courses. However, these blocks were not considered part of any courses. Block I was placed in the first quarter of the first clinical year (third year of the total program) and was concurrent with the course "Introduction to Clinical Nursing"; Block II was placed in the fourth quarter of the first

clinical year and was concurrent with "Medical and Surgical Nursing"; and Block III was placed in one of the two quarters in the last year and coincided in time placement with "Nursing in the Outpatient Department."

After considerable study directed toward identifying the content that might be integrated in existing courses and the content that might be taught in each disaster block, the Curriculum Committee issued the following guide, which indicates where specific aspects of disaster nursing should receive major emphasis and where there should be supporting integration.

Placement of Disaster Nursing Content

	MAJOR EMPHASIS IN	SUPPORTING INTEGRATION IN
I. TYPES OF DISASTERS	1st Disaster Block	
1. Enemy-caused	"	
2. Natural (tornado, flood, etc.)	"	PH, Rur
3. Occupational	"	PH, Rur, OPD
4. Transportation	"	OPD, Ped, Surg
5. Rural	"	Rur, PH, OPD
6. Home	"	* * * *
7. Epidemic	"	PH
II. UNINJURED SURVIVORS		
scope of problem	1st Disaster Block	* * * *
1. Chronically ill	M & S	PH, Ped
2. Trigger mechanism illnesses	"	* * * *
3. Presently hospitalized patients	* * * *	3rd Disaster Block
4. Communicable diseases	PH	Ped, M & S
5. Separated families	* * * *	1st, 2nd, 3rd Disaster Blocks

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* * * * contributed to throughout many areas of the curriculum ("sprinkled")

F.A.-First Aid
Gyn-Gynecologic Nursing
Intro. Nur-Introductory Nursing
M & S-Medical and Surgical Nursing
Neuro-Neurologic Nursing
Nur Mngmt-Nursing Management

Nut-Nutrition
Obs-Obstetric Nursing
OPD-Outpatient Department Nursing
OR-Operating Room Nursing
Ortho-Orthopedic Nursing
Path-Pathology

Ped-Pediatric Nursing
PH-Public Health Nursing
Psy-Psychiatric Nursing
Rur-Rural Nursing
Surg-Surgical Nursing
Tbc-Tuberculosis Nursing

	MAJOR EMPHASIS IN	SUPPORTING INTEGRATION IN
6. Refugees & shelter occupants	PH	1st Disaster Block
7. Disaster workers	• • • •	1st, 2nd, 3rd Disaster Blocks
III. INJURED SURVIVORS		
scope of problem	1st Disaster Block	• • • •
1. Blast		
a. respiratory problems	M & S	Neuro, Ped, Tbc, OR, OPD
b. pneumothorax and hemothorax	M & S	Tbc
c. pulmonary hemorrhage	Tbc	M & S
d. chest injuries	M & S	OR, OPD
e. head injuries	M & S	Ped, OR, OPD
f. surgical trauma	M & S	OR, OPD
g. hemorrhage	M & S	• • • •
h. amputations	M & S	OPD, OR
i. crushing injuries	M & S	OPD, OR
j. spinal cord injuries	M & S	Neuro, OPD
k. fractures	Ortho	Ped, OPD
l. fluid imbalance in mass casualties	M & S	• • • •
m. eye injuries	M & S	OPD, Ped
n. wound infections	M & S	• • • •
o. emotional reactions	1st Disaster Block	Psy
2. Radiation		
a. radiation illness	Gyn	2nd Disaster Block
b. wound infections	"	2nd Disaster Block
c. emotional reactions	"	Psy, 2nd Disaster Block

3. Thermal radiation		
a. burns	M & S	Ped
b. eye injuries	M & S	OPD
c. wound infections	M & S	PH, Ped
d. emotional reactions	M & S	Psy, Ped, 1st Disaster Block
4. Heat and cold		
a. burns	M & S	* * * *
b. cold injuries	F.A.*	M & S, OPD, PH
c. wound infections	M & S	PH, Ped
d. emotional reactions	M & S	Psy, Ped, 1st Disaster Block
e. heat injuries	F.A.	M & S, OPD, PH
5. Buried under debris	M & S	2nd Disaster Block
a. respiratory problems	M & S	OPD, OR
b. amputations	M & S	OR, OPD
c. crushing injuries	M & S	OR, OPD
d. emotional reactions	M & S	Psy, 2nd Disaster Block
6. Chemical		
a. chemical injuries	PH	OPD, 2nd Disaster Block
b. eye injuries	M & S	PH, OPD, Ped
c. emotional reactions	M & S	Psy, 2nd Disaster Block
7. Gases		2nd Disaster Block
a. eye injuries	M & S	
b. gases and toxins	PH	
c. emotional reactions	M & S	Psy, 2nd Disaster Block
8. Near drowning	1st Disaster Block	M & S

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* First aid course a prerequisite for admission to the nursing curriculum

	MAJOR EMPHASIS IN	SUPPORTING INTEGRATION IN
IV. EMERGENCY CARE & LIFE SAVING		
Measures	F.A.*	* * * *
Constants:	* * * *	
a. emergency drugs	"	
b. preventing emotional shock	"	
c. transportation of wounded	"	
d. observation of signs & symptoms	"	
e. emergency care to excited	"	
f. relief of pain	"	
g. chest thumping	M & S	
1. Airway		
a. patent airway, positioning	M & S	* * * *
b. patent airway, mechanical	M & S	Neuro, OR, Ped, OPD
c. artificial respiration, mechanical	M & S	* * * *
d. artificial respiration, other methods	M & S	* * * *
e. emergency O_2	M & S	* * * *
f. care of seizures	Neuro	* * * *
g. care of comatose, unconscious	M & S, Neuro	* * * *
h. overdose of medications	* * * *	
i. respiratory distress	* * * *	
j. suctioning	* * * *	
k. emergency tracheotomy	* * * *	

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* First aid course a prerequisite

2. Hemorrhage		
a. fluid balance	M & S	* * * *
b. recognition and control	F.A.*	* * * *
c. prevention and control of shock	F.A.*	* * * *
d. pressure dressings, bandages	F.A.*	Intro. Nur, OPD
3. Shock		
a. mechanism	Path	M & S
b. prevention and control of shock	M & S	* * * *
c. recognition of shock (with or without vital signs)	M & S	* * * *
d. positioning	M & S	OR, F.A.*, OPD, Ped
e. fluid balance	M & S	* * * *
4. Traumatic injury (excluding hemorrhage, including cold)		
a. immobilization	F.A.*	OPD, Rur
b. protective dressings	F.A.*	OPD
c. first aid to eyes	M & S	F.A.*, OPD
d. first aid to fractures	F.A.*	Ortho, OPD
e. debridement of wounds	OR	2nd Disaster Block
f. cold injuries	F.A.*	PH
5. Decontamination	2nd Disaster Block	
a. radiation	"	Gyn
b. chemical	"	PH, OPD, F.A.*
V. TREATMENT PRIORITY & SORTING	3rd Disaster Block	* * * *
VI. NURSING MEASURES PECULIAR TO DISASTER SITUATION	* * * *	3rd Disaster Block

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* First aid course a prerequisite

	MAJOR EMPHASIS IN	SUPPORTING INTEGRATION IN
VII. CRITERIA FOR ESSENTIAL NURSING	3rd Disaster Block	* * * *
1. Disparities in:		
a. medical supervision	"	Nur Mngmt
b. personnel (professional and nonprofessional)	"	"
c. equipment	"	"
d. supplies - drugs	"	"
e. time	"	"
f. space	"	"
2. Mass Care versus individual care (Philosophy and experience)	"	* * * *
3. Tension of work situation	"	* * * *
4. Types of casualties	"	1st Disaster Block
VIII. IMPROVISATIONS OF EQUIPMENT (SCOPE)	3rd Disaster Block	1st Disaster Block
1. CDEH equipment	2nd Disaster Block	OR, M & S
2. Emergency obstetrical pack	Obs	OPD, Rur
3. Preparation of food	Nutrition	2nd Disaster Block
4. Diversional activities	2nd Disaster Block	Psy, Ped
5. Utilities (heat, water, electricity)	3rd Disaster Block	1st Disaster Block, PH, Rur
6. Equipment for physical treatments	* * * *	
7. Shelter	3rd Disaster Block	1st Disaster Block
8. Clothing	3rd Disaster Block	1st Disaster Block
IX. MANAGING PATIENTS WITH LITTLE OR NO MEDICAL SUPERVISION		
1. Philosophy	3rd Disaster Block	

2. Psychological preparation	3rd Disaster Block	
3. Theoretical basis for the what and why	* * * *	
a. emergency first aid	F.A.*	* * * *
b. initiate treatment for:		
burn patients	M & S	Ped, OPD
simple fractures	Ortho	OPD
normal obstetrics	Obs	OPD, Rur
radiation illness	Gyn	M & S, 1st Disaster Block
psychiatric casualties	Psy	* * * *
medical emergencies	M & S	* * * *
communicable disease	PH	Ped, Rur
c. prescribe & administer:		
immunizations	PH	OPD, Ped, Rur
antibiotics	* * * *	
narcotics	* * * *	
I.V.'s & s.c.	* * * *	
diets	Nutr	* * * *
Elimination control	* * * *	
X. PROBLEMS OF ADMINISTERING DISASTER NURSING SERVICES	3rd Disaster Block	
1. Understanding the scope of the problem	"	Nur Mngmt
2. Nursing Service Disaster Plan	"	"
a. relationship to other planning	"	"
b. reallocation of hospital areas	"	"
c. staffing	"	"

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* First aid course a prerequisite

	MAJOR EMPHASIS IN	SUPPORTING INTEGRATION IN
d. assignments	3rd Disaster Block	Nur Mngmt
professional	"	* * * *
nonprofessional	"	* * * *
patients	"	* * * *
volunteers	"	* * * *
e. supervision	"	Nur Mngmt
f. communications - facilities and channels	"	"
XI. TEACHING RESPONSIBILITIES IN DISASTER		
1. Principles	3rd Disaster Block	
a. things that differentiate teaching under disaster conditions	"	
1) large groups of lay persons	"	Nur Mngmt
2) nursing procedures for use outside hospital situation	"	* * * *
3) maximum limitations in time and equipment	"	PH
4) recognition of differences in learners	"	* * * *
5) on-the-spot teaching versus planned teaching	"	* * * *
6) teaching patients self-care and buddy-care	"	* * * *
2. Practice	* * * *	3rd Disaster Block
XII. PREVENTIVE AND PROTECTIVE MEASURES		
1. Warning systems (community & hospital)	1st Disaster Block	* * * *

2. Individual survival measures	1st Disaster Block	* * * *
3. Group survival action	3rd Disaster Block	Nur Mngmt
4. Public Health safeguards	2nd Disaster Block	PH

XIII. EMOTIONAL PROBLEMS OF NURSE AS A WORKER

1. Acceptance of the disaster	1st, 2nd, 3rd Disaster Blocks	* * * *
2. Anxiety over her own survival	"	"
3. Reaction to mass physical mutilation	"	"
4. Reaction to mass death	"	"
5. Reaction to inevitable death of large numbers	"	"
6. Acceptance of sorting	3rd Disaster Block	1st Disaster Block
7. Acceptance of extended functions	"	2nd Disaster Block
8. Separation from the familiar	1st, 2nd, 3rd Disaster Blocks	* * * *
people	"	
places	"	
work situation	"	
organization	"	
role, etc.	"	
9. Fatigue (mental & physical)	"	* * * *
10. Working in highly emotionally charged situation	"	* * * *
11. Contact with wide variety of behavior	Psy	* * * *

	MAJOR EMPHASIS IN	SUPPORTING INTEGRATION IN
XIV. PSYCHOLOGICAL REACTIONS OF VICTIMS (SCOPE)	2nd Disaster Block	Psy
1. Situations producing reactions	Psy	* * * *
a. confinement	Psy	* * * *
b. physical mutilation (impact, pain, etc.)	M & S	* * * *
c. privations	2nd Disaster Block	Psy
d. separation from familiar (people, places, things, etc.)	"	"
e. threats to survival "inescape" from danger	Psy	* * * *
the disaster itself	"	* * * *
lack of care, etc.	"	* * * *
2. Reactions		
a. normal reactions to stress	Psy	* * * *
b. psychotic reactions (transitory and permanent)	"	
c. neurotic reactions	"	
3. Handling reactions	"	* * * *
XV. GROUP LIVING IN SHELTERS (SCOPE OF PROBLEM)	1st Disaster Block	
1. Environmental factors		
a. providing sanitary environment	PH	1st Disaster Block
pest control	"	"
proper ventilation	"	"

personal hygiene facilities	PH	1st Disaster Block
waste disposal	"	"
b. health maintenance		
recognition & control of communicable disease factors	PH	* * * *
meeting dietary needs	Nutr	* * * *
management of elimination	* * * *	1st Disaster Block
problems of sleep and rest	* * * *	"
meeting special needs of geriatric group	* * * *	"
meeting special needs of pediatric group	* * * *	"
2. Human factors		
a. medical problems (scope)	1st Disaster Block	
care of medical emergencies	M & S	* * * *
care of surgical emergencies	M & S	* * * *
care of obstetrical emergencies	Obs	OPD
care of communicable disease	PH	Ped, Tbc
importance of medicines in regime of chronically ill	M & S, Neuro	* * * *
adaptations for handicapped	M & S, Neuro	* * * *
standing orders for simple ailments	PH	Tbc, Rur
first aid and emergency care	F.A.*	* * * *
handling lack of equipment	PH	* * * *
group isolation for disease control	PH, Tbc	* * * *

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* First aid course a prerequisite

	MAJOR EMPHASIS IN	SUPPORTING INTEGRATION IN
b. psychological problems (scope)	Psy	1st Disaster Block
problem of group living	Psy	* * * *
problem of confinement	"	"
problem of claustrophobia	"	"
need for privacy	"	"
need for activity	"	"
reactions to stress situation	"	"
fatigue of family members	"	"

XVI. AGENCIES THAT A NURSE MUST KNOW IN ORDER TO FUNCTION IN A DISASTER

1. OCDM 2. Red Cross 3. Military Local, State & National	3rd Disaster Block	1st Disaster Block
4. Public Health and Welfare	PH	1st Disaster Block
5. Community medical care facilities and personnel	* * * *	3rd Disaster Block

INTEGRATION OF CONTENT

As an example of how existing learning experiences were utilized for "supporting integration," the following account describes the way in which experiences in the course "Orientation to Nursing Management" contributed to the development of the ability to teach non-nurse personnel under conditions of disaster (Item XI, 1a (1) in the outline "Placement of Disaster Nursing Content").

The four-week course "Orientation to Nursing Management" is offered during the last year of the nursing program. Prior to it, each of the students has had experience in teaching a group of patients with diabetes, a group of patients with some kind of heart condition, and two groups of mothers needing instruction in the care of newborn infants. Therefore, the students come to the nursing management course with a fairly adequate knowledge of the principles of learning; they have some degree of skill in determining or recognizing specific learning needs; and they are able to utilize the principles of learning in teaching patients.

The objectives of the nursing management course are to develop skill in solving complex nursing problems and skill in providing leadership to a group of nonprofessional personnel who assist the student in the care of a group of patients. Since teaching these nonprofessional personnel is a part of the leadership learnings of this course, it seemed appropriate to accent this skill as one utilizable in disaster situations. In this respect, the instructors' efforts were directed toward helping the student develop the ability to assume the function defined by the American Nurses' Association in its study The Role of the Nurse in Disaster as that of "teaching and directing nonprofessional personnel for whom the nurse is assigned responsibility."

Each student, in her orientation to the requirements of the leadership course, is informed of the expectation that some time during the four-week period she will arrange and plan for a class of nonprofessional personnel and instruct these personnel in the performance of some one nursing task.

The first of the indicated responsibilities, that of arranging for the class, involves the application of considerable managerial skill. The student must consult with the head nurse in her experience area, determine with the head nurse's help what personnel need to be taught, the nursing task which this group of personnel can appropriately learn, and the best time for holding the class. The student is then responsible for scheduling the class and informing the class members of the activity.

She then begins her background preparation and proceeds to the point of developing a plan for her teaching. She is required to do some selected reading, whereby she gains knowledge of the training-within-industry teaching method developed during World War II and the on-the-job-training method for teaching nursing aides. She is encouraged to follow the simplified preparation steps in the training-within-industry method, proceeding from the development of a timetable that defines how much skill she expects the worker to acquire and how soon she expects the skill to be acquired to the breaking down of the task into a list of the principal steps and the key points to be stressed. A definite plan, a logical procedure, and a clear objective are the tests of adequate preparation.

In preparation for the actual conduct of the class, emphasis is placed on preparing the aide by putting her at ease, cultivating her interest by explaining the purpose, and making her comfortable. Telling, showing, illustrating, and questioning are incorporated in the plan. A try-out performance is incorporated, in which the aide tells and shows the student teacher how to perform the skill, while the student teacher asks questions and corrects errors. The aide continues till she has learned. She is then put to work on her own, with the teacher checking frequently, encouraging further questions, and getting her to focus on key points as she progresses.

A review of some of the kinds of tasks that are chosen for these aide classes will give a clearer picture of the kind of experience the senior nursing student has. Rather frequently taught measures include testing diabetic urine, determining specific gravity of urine samples, determining body temperature, making a postoperative bed, applying ace bandages, giving special oral hygiene, and giving special foot care. Some of the less frequently taught measures are conducting simple passive range motion to selected body parts, applying skin packs, and helping patients with postural drainage.

In some instances, the student teacher arranges to demonstrate the measures with an actual patient, and in other instances she asks one of her class members to play the role of a patient. Likewise, the class members sometimes practice with actual patients and sometimes with one another; the decision is usually dependent upon the nature of the task and the relative skill of the learner.

In the situation in which the senior student is having this experience, an initial inservice education program conducted by the nursing administrator in charge of inservice education provides instruction for all newly employed aides in the tasks that are the responsibility of aides the hospital over. This accounts for the specialized nature of some of the tasks chosen for the management students' planned experience.

The number of aides who attend these classes ranges from three to seven. The usual time for scheduling the classes is during the hours that are close to the change of tours of duty; thus, only minor adjustments in assignments are needed to enable personnel from two different shifts to attend.

The instructor of the management course has a post-teaching conference with each of the student teachers, in which self-evaluation is stimulated. All of the members of the management class have a two-hour session in which they communicate to their class members some of their evaluation of the activity along with brief descriptions of the experience. In this evaluative session, the senior is asked to identify the principles of learning that she saw in operation during her teaching session and some one new learning that she experienced with relation to the teaching-learning process.

A reaction of most of the students is surprise at the high level of motivation that they find among their learners and the amount of comfort that seems to prevail in the learning situation. In a minority of instances, students have reported some lack of readiness on the part of the learners. This seems to be related more to the task being taught than to any other factor. Occasionally the student teacher experiences the aide's reaction that "this is nurse's work, not aide's work." However, the aide usually extends herself toward supporting the student teacher, perhaps because she senses the teacher's insecurity as a beginner in this role. In order to predict the similarity of this behavior of the learner to that of the learner in the disaster situation, the instructor interviewed several experienced Red Cross disaster workers in the area and ascertained that the motivation for learning among volunteer workers in disaster situations tends to be high. Thus, insofar as the motivation of the learner is concerned, this experience was a realistic approach to preparation for disaster.

Another rather frequently identified new learning for the senior student is a realization that an understanding of the reasons for a given task will motivate the learner to perform the task conscientiously.

Another rather frequent observation relates to the individual differences in the learners and the effect these differences have upon learning. The student teacher continually reports the extremes of ability she seems to sense among her learners, and the wide variety of background experience that the learners bring to the situation. It is to these differences that the student seems to make one of her most ready adjustments. There seems to be a transfer of learnings from the previous experiences she has had with teaching patients. In these previous experiences with patients, she has learned to utilize the contributions of the more experienced patient in the group discussion teaching process. The contribution of the more experienced aide seems to be readily utilized by the student teacher in a similar manner.

Probably one of the greatest deficiencies in this experience with respect to the transfer to a disaster situation stems from the absence of the deep emotional disturbance that, in a mass casualty situation, is likely to interfere with the perception of situations and with behaviors. In order to be able to handle extremely tense or traumatic situations, the individual needs frequent repetition of experiences so that she will develop a habit of reacting appropriately. It was difficult to find situations in which the student could have this sort of experience. The instructor did witness some of these elements in a class in which a student was teaching a group of aides the care of the body after death.

THE DISASTER BLOCKS

The objectives and teaching plans for the three disaster blocks are presented here.

Disaster Block I

A. Objectives

To develop an understanding of mass disaster and the problems it creates.

1. To acquire knowledge of the kinds of disasters which may create mass care problems.
    a. Peacetime disasters: floods, hurricanes, fires, blizzards, epidemics, earthquakes, tornadoes, explosions, famines, droughts.
    b. Disasters caused by war: conventional bombing, nuclear weapons.

2. To develop an understanding of the problems created by disasters.

   a. Disparity between the number injured and the number of those available to care for them.

   b. Disparity between the need for supplies, equipment, water, food, and clothing and the supplies available.

   c. Disruption of transportation, communication, and all utilities.

   d. Homeless victims--broken families.

   e. Illness among non-casualties.

   f. Psychological problems.

   g. Premature deliveries.

   h. Others.

B. General Study Guide

Nursing in Disaster

1. Study Questions

   a. What kinds of natural disasters would be most likely to occur in the state of Minnesota?

   b. What kinds of injuries are most common in various kinds of natural disasters, i.e., floods, tornadoes, forest fires?

   c. What are some of the peacetime health problems that are accentuated or triggered in various kinds of disasters?

   d. What are some of the problems arising in the care of patients in refugee shelters?

   e. What nursing skills would be most in demand with each kind of disaster?

   f. What kinds of supply shortages become most acute in natural and enemy-caused disasters?

   g. What kinds of injuries are most prevalent in nuclear explosions?

   h. What nursing skills will be most in demand in case of nuclear disaster?

C. Plans for Class I (2 hours)

1. Discussion Topic: Peacetime disasters and the problem created by these disasters.

2. Statement of the Problem: Throughout your clinical nursing course you will be encouraged and stimulated to make application of the knowledge and skills you are acquiring to situations, imminent in our present society, in which a mass disaster produces mass casualties needful of medical and nursing care. Your ability to project your thinking into such a situation is dependent upon your knowledge of what such a situation might involve. It is hoped that the study of this unit will contribute to your understanding of mass casualty situations and thereby give you a "backdrop" for application of your learnings.

3. Assignment and Class Activity: The class is to be divided into three groups each of which will make a study of one kind of natural disaster. The group will then prepare and present a report of its findings in class.

   The report of each group should be about 20 minutes in length. This will allow for questions and discussions.

   The report may include any content pertinent to the statement of the problem but should focus mainly upon:

   a. Environmental health problems produced by this kind of disaster.

   b. Kinds of injuries most common in this type of disaster.

   c. Kinds of nursing skills which would be most needed in this kind of disaster.

   d. Descriptive material needed to understand this kind of disaster.

   Group I: Fires resulting in mass casualties

   Group II: Tornadoes resulting in mass casualties

   Group III: Floods resulting in mass casualties

   References to data derived from accounts of actual disasters will make the report more meaningful. Utilize the bibliography in the course outline or any other material you care to search out.

D. Plans for Class II (2 hours)

1. Discussion Topic: Self-help measures to be employed in natural and man-made disasters.

2. Assignment and Class Activity: Each student is to seek the answer to one of the following questions and to answer roll call with a brief informative statement identifying self-help measures appropriate to the following queries.

   a. What should one do to preserve oneself in case of floods:
      (1) With warning
      (2) Without warning

b. What should one do to preserve oneself in case of hurricane? (Assume there is a warning.)

c. What should one do to preserve oneself in case of exposure to cold and frostbite to a portion of the body?

d. What should one do to preserve oneself in case of tornado, assuming there is minimal warning?

e. What is the sound pattern of the siren that announces an air raid--with warning time--and what should one do to preserve oneself?

f. What is the sound pattern of the siren that announces an air raid--no warning time--and what should one do to preserve oneself?

g. Where is the bell and light warning installation in our hospital? What is the meaning of the various light signals? (You may need to interview the switchboard operator. Contact her at the central information desk.)

h. What evacuation route should the residents of Powell Hall take in evacuating Minneapolis?

i. What preplanning do you think you should do for transportation in case an evacuation warning is given while you are a resident of Powell Hall?

j. What self-help measures would you employ in case you were a resident of Powell Hall, a night fire occurred, and you awakened to find your corridor filled with smoke?

k. What kinds of foods are stressed as important in the "pantry supply" one should keep on hand in case of mass disaster?

l. What would you do to insure a safe drinking water supply in case of interruption of the water system in mass disaster?

m. How would you decontaminate yourself in case you were sprinkled with radioactive fallout in case of nuclear explosion?

n. What does the suggested Civil Defense First Aid Kit include for treatment of exposure to nerve gas?

o. What does the suggested Civil Defense First Aid Kit include for treatment of shock due to loss of fluids?

p. How do you decontaminate cans, bottles, and cartons that have been exposed to fallout?

q. What is the Civil Defense plan for disposal of garbage and human wastes in the individual home shelter?

r. What tools and utensils are most essential to a home preparedness kit to be used in mass disaster?

E. Plans for Class III (2 hours)

1. Discussion Topic: The nature of mass disaster caused by nuclear explosion.

2. Assignment: Review the required reading of Hachiya's Hiroshima Diary, seeking information pertaining to the following topics:

   a. Sequence of physical phenomena and associated kinds of destruction at and following the explosion of the A-bomb.

   b. Kinds of injuries experienced by the victims with relation to the location of the individual.

   c. Kinds of illnesses and the accompanying symptoms which ensued.

   d. Physiological reactions of the victims.

3. Class Activity:

   a. Viewing of the film: "Medical Effects of the Atomic Bomb, Part I"

      In preparation for the film, the students are asked to focus upon seeking answers to the following questions raised as a result of the discussion in Class II.

      (1) How far would you go in evacuating a city after nuclear explosion?

      (2) What would you do when you arrived at your destination, assuming you have had warning?

      (3) What is the nature of fallout?

      (4) What can you anticipate will be the nature of destruction in the zones radiating out from the point of detonation?

      (5) Where will the greatest number of casualties be? What kind of casualties will there be?

   b. Following the viewing of the film, the knowledge gained from reading and from the film are transposed to an accompanying damage template that includes:

      (1) Identification of zones of destruction and amounts of building damage.

      (2) Percentages of uninjured and injured survivors in each zone.

      (3) Percentages of thermal, blast, and radiation injuries in each zone.

      (4) Relationships geographically to Minneapolis as a target.

   c. Discussion of some of the positive aspects of preparation.

      (1) Federal defense system, which gives some assurance of warning time.

(2) Local civil defense planning.

(a) Hospital relocation plans.

(b) Emergency treatment stations and Emergency Civil Defense Hospitals.

Disaster Block II

A. Objectives

1. To add to the knowledge already acquired of the nature of possible enemy-imposed disaster.

   a. Destruction imposed by a 20 MT weapon with Minneapolis as the target.

      (1) Damage.

      (2) Kinds of injuries.

   b. Possible hazards of chemical weapons.

2. To gain a knowledge and understanding of the local Civil Defense plans for medical and health care in the event of enemy-imposed disaster.

   a. Emergency Treatment Stations.

   b. Emergency Civil Defense Hospitals.

   c. Relocated pre-existing hospitals.

3. To seek an understanding of the kind of activities for which the nurse will be responsible in the Emergency Treatment Station and the Emergency Civil Defense Hospital.

4. To stimulate the application of first aid and emergency skills and judgments to a mass disaster situation.

B. General Study Guide

1. What emergency health facilities will go into operation in case of mass nuclear disaster?

2. What would be your responsibility as a nursing student if you were among the survivors of such a disaster?

3. What types of injuries result from the thermal energy, the blast effects, and the ionizing irradiation of nuclear explosion?

4. What kinds of symptoms do patients have as a result of nuclear irradiation?

5. What tissues are most sensitive to irradiation?

6. What is your understanding of the terms "Disparity" and "Sorting" as applied to mass disaster?

7. The sorting process provides for grouping patients into what four categories?

8. What modifications will be made in the treatment of burn patients in mass disaster?

9. What basic first aid knowledge must we have for combating chemical warfare?

C. Plans for Class I

1. Discussion Topics:

   a. Nuclear disasters and the kinds of injuries and illnesses caused by them.

   b. The role of the nurse in this kind of disaster.

   c. The concept of sorting.

2. Assignment and Class Activity:

   a. The film "Medical Effects of A-Bomb, Part II" is used to stimulate discussion of topic a. The following study questions are reviewed with the students prior to the film.

      (1) What kinds of injuries prevail as a result of the blast effect of the bomb?

      (2) What in addition to the injuries themselves would be one of the major problems of the victims of blast?

      (3) What materials furnish the best shielding from the thermal energy of the bomb?

      (4) What are some of the types of injuries and disfigurement caused by the thermal energy?

      (5) What parts of the body are most vulnerable to the nuclear radiation effects of the bomb?

         (a) What tissue is most sensitive?

         (b) What tissue is intermediately sensitive?

      (6) What kinds of symptoms ensue as a result of nuclear irradiation?

      (7) Amongst those who survive, at what time intervals will their symptoms occur?

b. The above questions are used as a basis of discussion following the film. The following summary notes based on the film are used to identify symptoms which may help in determining amounts of irradiation exposure.

600 R	(Very severe - death within two weeks) Nausea and vomiting within one hour continuing several days. Diarrhea continuing for a few days.
400 R	(severe) Nausea and vomiting for a few hours--persists 24 hours. Fatigue--4-20 days (lymphocytopoenia) 3rd week - Epilation, oropharyngeal ulcers, purpura, epistaxis, melana, menorrhagia. Diarrhea, fever, infection. 3rd to 6th week--death for 50%.
200-300 R	(moderately severe) Vomiting for a few hours. 2nd to 3rd week--epilation, malaise, sore throat, petechiae, diarrhea. Recovery for most--some succumb to secondary infections.
Less than 200 R	Fatigue and malaise--3rd to 6th week. Recovery.

c. Additional functions of nurses in man-made disasters.
The following excerpts from The Role of the Nurse in Disaster (American Nurses' Association, 1960) are used as a basis for discussion.

Function: "Performs therapeutic medical measures in the absence of immediate medical direction. . . .

Examples

"1. Administering medications and treatment, including parenteral medications as directed

"2. Administering whole blood and intravenous solutions as directed

"3. Catheterizing males and females

"4. Managing the psychologically disturbed

"5. Treating symptoms of radiation sickness

"6. Life-saving and survival measures

a. Controlling hemorrhage

b. Recognizing and giving immediate treatment for shock

c. Attaining and maintaining patent airway, intratracheal catheterization to include emergency tracheotomy

d. Cleansing wounds properly and adequately

e. Inserting nasogastric tubes, to include lavage and gavage, as directed

f. Immobilizing fractures

g. Assisting in surgical procedures

"7. Administering anaesthetics under medical supervision

"8. Managing normal deliveries."

Function: "Prepares, administers, establishes priorities, and supervises nursing care plans for large and unpredictable numbers of sick and injured in the surviving population . . . .

Explanation

"The nurse might find herself alone for indeterminate periods of time and will need to make decisions in which customary methods of carrying out standards of practice are compromised with the concept of accomplishing the greatest good for the greatest number. She must accept the concept that many sick and injured of the surviving population will need minimal care but will continue to work: some will need immediate care in order to save life; some can have care delayed without risk to life; and many will be classified as "expectant" survivors and will receive comfort care only.

"The nurse must understand the concepts of sorting to accept the changes in priority for care dictated by a mass casualty situation when the immediate life-saving category carries the highest priority for care and the critically injured group the lowest priority.

"The nurse may be responsible for the operation of treatment and aid stations in reception areas and in communities where physicians are inadequate in number; this responsibility may include the diagnosis and treatment of minor illnesses and injuries, institution of life-saving measures and the referral of more serious cases to physicians.

Example

"The nurse:

"1. May be the one to make a rapid appraisal of the existing medical and nursing needs

"2. Will need to make appraisal of and plan for safest environment for occupants

"3. May have to direct priority and emergency care

"4. Will need to utilize available persons to assist in giving this care."

d. The film "Sorting" is used as a basis for discussion of the sorting concept. The following study questions are reviewed with the students prior to the film.

(1) What is your understanding of the term disparity as applied to a mass disaster situation?

(2) How is sorting related to disparity?

(3) The sorting process provides that patients be divided into what four categories?

(4) Identify one type patient who would be classified in each of the four groups.

(5) What factors have to be considered in determining who shall be evacuated?

Triage (Sorting)

As a basis for the discussion of the concept of sorting, the following materials have been excerpted from "Sorting in the Management of Mass Casualties" by Carl W. Waldron, M.D., in Report on National Emergency Medical Care, Annex E, American Medical Association, April 15, 1959.

Triage is that dynamic and continuing professional medical process of classifying the sick and injured according to the urgency and the types of conditions presented, in order that each casualty may receive optimum treatment and care in the best staffed and equipped treatment facility available, within the optimum time and in favorable condition, to the end that the greatest good can be rendered to the greatest number in the shortest time within the means available.

Triage should be a continuing function at all medical installations and facilities treating the casualties resulting from a mass attack.

Priority I. Casualties requiring minimal treatment.
a. Those who may return to duty after minimal treatment is given.
  (1) Those with small lacerations or contusions.
  (2) Those with simple fractures of small bones.
  (3) Those with second degree burns of less than 10 percent of body surface and not involving incapacitating burns of face and hands.

b. Noneffectives who require domiciliary or nursing care after minimal treatment is given.
  (1) Those with disabling minor fractures.
  (2) Those with burns of the face or hands of less than 10 percent extent but which interfere with the individual's ability to care for or feed himself.
  (3) Those with moderate neuropsychiatric disorders.

(It is estimated that 40 percent of the total casualties require but minimal treatment and therefore actually have no priority. Most would be ambulatory and therefore in most instances would receive treatment at the Emergency Treatment Station while they are being sorted before the ETS facility is overloaded by the reception, sorting, and treatment of Group II priority casualties and the sorting of priority Group III and Group IV casualties.)

Priority II. Casualties requiring immediate care.

a. Those with hemorrhage from an easily accessible site.
b. Those with rapidly correctable mechanical respiratory defects.
c. Those with severe crushing wounds of the extremities.
d. Those with incomplete amputations.
e. Those with severe lacerations involving open fractures of major bones.

(Group II casualties, estimated to comprise 20 percent of the total, have the highest priority for surgical treatment, in that a short procedure will usually suffice to save a life. The primary function of the Emergency Treatment Station is that of lifesaving along with sorting and dispatch of these patients and those of Groups Ib, III, and IV to definite hospitals.)

Priority III. Casualties whose surgical treatment may be delayed without immediate jeopardy to life.

a. Those with closed fractures of major bones.
b. Those with moderate lacerations without extensive bleeding.
c. Those with second degree burns of less than 30 percent and third degree burns of less than 30 percent of the body surface.
d. Those with noncritical central nervous system injuries.

(Group III casualties, also estimated at 20 percent, are those for which delay in treatment, though undesirable and conducive to complications such as increased infection, does not endanger life. Definite treatment will be instituted as soon as hospitals are available and ready for their reception and care.)

Priority IV. Casualties whose therapy will be expectant.

a. Those with critical injuries of the central nervous system or respiratory system.
b. Those with significant penetrating or perforating abdominal wounds.
c. Those with multiple severe injuries critical in nature.
d. Those with severe burns of large areas (second or third degree burns of 40 percent or more of the body surface).

(Group IV casualties, while considered as expectant and in general hopeless, will not be neglected but will receive treatment if they reach Civil Defense hospitals, provided facilities, personnel, equipment, and supplies are available. This is contrary to the accepted civilian concept that the most severely injured are given the highest priority, and the less severely injured the lowest priority. In mass casualties, it must be accepted that priority of care must be based on the greatest good to the greatest number. The lengthy surgical procedures and the other measures required for one expectant casualty would jeopardize the lives of several casualties in other priority groups. Increased loss of life must be accepted in this group.)

D. Plans for Class II (2 hours)

1. Discussion Topic: Emergency care of major types of injuries or problems in disaster.

2. Assignment and Class Activity: The class is to be divided into four sections, A, B, C, and D. Each of the sections will be divided into subgroups. Each of the subgroups within a section will make a study of the emergency care of one of the major types of injuries or problems of enemy-caused disaster and will prepare and present a report of its findings to its section.

   The report of each subgroup should be about 20 minutes in length. This will allow time for questions and discussion.

   The report may include any content pertinent to the statement of the problem but should focus mainly upon:

   a. Principles of medical treatment and care which have been established by physicians for mass casualty care.

   b. Other care essential to the particular injury or problem.

   c. Standing orders for drugs, fluids, or antibiotics based on the American Red Cross Handbook for Physicians and Nurses.

   d. Demonstration of any pertinent emergency procedure.

   Subjects chosen for subgroup discussion:

   a. Thermal burns

   b. Fractures

   c. Resuscitation and shock

   d. Casualties of chemical warfare

   e. Radiological casualties

   f. Decontamination from radiation.

E. Plans for Class III (1½ hours)

1. Discussion Topic: Organization and planning for disaster preparedness.

2. Class Activities:

   a. Instructor presentation of following content

      (1) Identification of division of responsibility between American Red Cross and Civilian Defense in disasters of all kinds.
      (2) Identification of division of responsibility between the American Red Cross and local government in natural disasters.
      (3) Identification of federal planning, state planning, and local planning responsibilities for Civilian Defense.
      (4) Discussion of local and state planning.
         (a) Unicom divisions.
         (b) Mobile support units.
      (5) Health and medical services division planning.

      Emergency Treatment Station--placement and functions.
      Emergency Civil Defense Hospitals--placement and functions.
      Relocation plans for pre-existing medical facilities.
      "Operations Alert" of 1959.

   b. Showing of the film "Emergency Hospitals" as preparation for field trip which the students will take in small groups when having their clinical course in "Nursing in the Operating Room."

F. Hoped-for Outcomes of Block II

1. That each student will have a more realistic impression of what an enemy-caused disaster might be.

2. That each student will have a better concept of the kind of health problems prevalent in, and the kinds of skills needed in, enemy-caused disasters.

3. That each student has become somewhat well versed in the care given in connection with certain kinds of health problems created by disaster.

4. That each student is somewhat aware of the over-all pattern of organization in case of disaster so that she may function smoothly.

Disaster Block III

Objectives

1. To gain knowledge and understanding which will enable a nurse to function more effectively in a shelter situation.

2. To gain knowledge and understanding which will enable the nurse to function more effectively in a pre-existing or relocated medical facility.

3. To gain an understanding of some of the biological problems inherent in any kind of disaster, inclusive of biological warfare.

4. To gain an understanding of the necessary individual and public health defenses against these biological problems.

Class Activities

The class activities for Block III had not been worked out in detail when the final report of the University of Minnesota's part of the project was made to the NLN. An outline of some of the material planned for inclusion in the unit is as follows:

I. Shelter Living

  A. Administration.

    1. General administration.

    2. Nurse's role within the general pattern of administration.

      a. Problems nurse might have to solve.

      b. Principles to be applied in solving.

    3. Relationships with others.

  B. Nursing in a shelter.

    1. Bedside and technical skills.

    2. Chronic illness.

      a. Diabetic.

      b. Cardiac.

      c. Arthritic.

      d. Physically handicapped.

    3. Maternal and child health.

      a. Communicable disease.

      b. Emotionally disturbed.

  C. Survival problems.

    1. Decontamination of food and water.

    2. Disposal of excreta.

  D. Emotional problems of the nurse as a worker in a shelter.

II. Disaster Program of the University of Minnesota Hospitals.

III. Biological Problems Inherent in Disaster; Defense against Them.

The following films had been reviewed by members of the faculty as possible teaching tools for Block III:

"Disaster Aid: Public Health Aspects"

"Public Health Problems in Mass Evacuation"

EVALUATION

Three tests were constructed for measuring the students' achievement and retention of learning and for obtaining their opinions about the effectiveness of the disaster blocks.

Test Administered after Block I

The first test was administered three months after the students had completed Block I. It was designed to ascertain:

1. The extent to which students had retained the content covered in Block I at the end of the three-month period.
2. The students' impressions of the effectiveness of the unit.

The test consisted of the following items:

1. List the specific points you recall about floods.
2. List the specific points you recall about fires.
3. List the specific points you recall about tornadoes.
4. What preparations need to be taken to protect yourself in case of nuclear attack?
5. What would you do if you heard a steady siren blast? (Consider several areas in the community where you might possibly be when you hear this.)
6. How extensive and what kind of injuries would you expect to find as you move away from the point of detonation of a nuclear bomb? How extensive would property damage be?
7. What is your opinion of the content and scope of this unit of disaster nursing?
8. Has the content of this unit helped you to understand the general purpose of preparation for disaster? If so, give example(s) of increased understanding or of knowledge gained.

At the time the NLN project came to a close, this test had been given to three classes of students. The broad conclusions drawn from these three testings were:

1. The retention of specific knowledges concerning different kinds of natural disasters was greatest for floods, second greatest for fires, and third greatest for tornadoes.

2. Knowledge about the types of injuries likely to be sustained seemed to be fairly well retained for all types of natural disasters studied.

3. Knowledge about the environmental problems seemed to be most vividly retained in the case of floods.

4. Information about the factors related to self-preservation seemed to be best retained with respect to tornadoes.

5. Detail concerning skills needed for functioning seemed to be most vividly retained with respect to victims suffering burns.

6. The specifics recalled concerning individual citizen preparation for self-preservation in case of nuclear disaster were inclusive of vital content. The average per student was four specifics.

7. The retention of accurate knowledge concerning warning signals was disappointing. The group divided about equally in the retention of accurate and inaccurate knowledge.

8. A fairly accurate knowledge of the kinds of destruction in nuclear disaster was retained.

9. The students were left with a feeling of needing to know more about nuclear disaster.

10. There was some evidence of eagerness to explore the nurse's role more thoroughly.

11. Students were beginning to identify principles applicable to functioning in all kinds of disasters.

Test Administered after Block II

The second test, administered after Block II, was designed to ascertain:

1. The extent to which students were using the knowledge and understandings they had acquired.

2. The receptivity of the students toward preparing for nuclear disaster.

3. The students' evaluation of the teaching methods used.

Some of the broad conclusions drawn from the results with three groups of students were:

1. Students gave evidence of increased understanding and knowledge of disasters and the need to prepare for them. They gave strong verbal support to the need to prepare. To a minimal extent, they had converted this support into action; when they had effected the conversion, it was mainly with respect to their families.

2. Students were not content with knowledge and understanding. They made a strong plea for opportunity to practice.

3. The psychological resistance to preparation for nuclear disaster had been greatly dissipated. Students voiced the need for nurses to take an active part in helping the community to this stage of acceptance.

4. Hiroshima Diary seemed to be the most valued reading. American Journal of Nursing articles placed second in value.

5. The Army films were heavily favored as learning aids.

6. Group discussions were almost unanimously favored as a teaching method. This preference seemed engendered by the benefits accruing from active participation.

7. The lectures with reference to local community preparation were most favored. Those on the nurse's role were second in favor.

8. Suggestions for improvement pointed toward the need for practice of skills.

Final Examination

The following examination was constructed for administration to the students at the conclusion of their final learning experiences in disaster nursing--Disaster Block III.

1. The Civil Defense warning signal has sounded; the Conelrad station has advised all citizens to take shelter immediately. The alarm and broadcast have sounded early enough to give you a two-hour warning before the enemy attacks.
    a. If you were near an evacuation route in Minneapolis, which would you do: evacuate or take shelter in your home shelter? Give your reasoning.
    b. If you were a nurse in the downtown area, what would you do, to whom would you report?
2. When the alarm sounds, you report to the proper authorities. You are assigned to a shelter located in the downtown area.
    a. What kind of situation would you expect to find, and what are your responsibilities?
    b. You are asked to care for the persons with chronic illnesses. What kinds of persons will you assist first, second, third, last?
3. The weather bureau has broadcast tornado warnings, but the area you are living in is besieged before anyone can evacuate. You are asked to assist the Red Cross nurses in caring for these people.

What kind of problems will you be facing and how will you go about solving these problems?

4. As a nurse citizen, what is your responsibility for preparing yourself against disease? What plan of action would you suggest for yourself and your family?

DEMONSTRATION IN THE BACCALAUREATE DEGREE PROGRAM OF THE SKIDMORE COLLEGE DEPARTMENT OF NURSING

GENERAL DESCRIPTION OF THE TOTAL PROGRAM

Skidmore College provides young women with the opportunity both to study in the fields of general education and to concentrate on the areas of their special ability or professional interest. The Department of Nursing represents one of the specialized fields of study. It is a requirement for the baccalaureate degree that at least half of the work of a student in any one of the specialized departments or fields be in liberal arts courses.

The aim of the Department of Nursing is to provide the student with a broad educational background in liberal arts as well as a basic professional education in nursing. The liberal arts portion of the program helps the student to understand the personal, social, and scientific problems that confront members of a democratic society; the nursing portion of the program prepares the student for beginning positions in nursing and the changing professional responsibilities in hospitals and public health agencies, and provides a sound basis for advanced study in a specialized field of nursing.

The Department of Nursing offers a four-year program in nursing that leads to a baccalaureate degree. At the time of the NLN project, the responsibility for conducting the courses in liberal arts and the professional courses rested with duly appointed Skidmore faculty with two exceptions: Skidmore students were receiving instruction in obstetric nursing at Cornell University--New York Hospital School of Nursing and in psychiatric nursing at the New York State Psychiatric Institute. The facilities for the other clinical learning experiences in nursing were provided through contracts with the University Hospital of New York, University--Bellevue Medical Center; Manhattan Veterans Administration Hospital, New York City; Department of Health, Bureau of Public Health Nursing, New York City; Visiting Nurse Association of Brooklyn; and Visiting Nurse Service of New York.

The Saratoga Springs campus and the facilities for clinical instruction in New York City are about 200 miles apart. The liberal arts and science faculties are located in Saratoga Springs, and the clinical nursing faculty is located in New York City. Administrative and organizational channels between the two geographic settings are operational for communication and coordination of the program.

The curriculum plan is as follows:

Course	Semester Credits
First Year	
Biology 103-104. Anatomy and Physiology	6
Biology 105. Microbiology	3

Course	Semester Credits
First Year (cont'd)	
Chemistry 105-6. General Chemistry	6
English 101-2. Freshman Composition	6
Nursing 100. Introduction to Nursing	3
Psychology 201b. Introduction to General Psychology	3
Sociology 101. Elementary Sociology	3
Physical Education	
Second Year (Four quarter sessions)	
Nursing 101. Introduction to Patient Care	12
Nursing 201-2-3. Growth and Development	3
Nursing 204. Medical, Surgical, Pediatric Nursing	9
Nursing 205. Medical, Surgical, Pediatric Nursing	8
Nursing 206. Medical, Surgical, Pediatric Nursing	9
Third Year (Four quarter sessions)	
Nursing 301 a,b,c. Communicable Disease and Long-Term Illness Nursing	3
Nursing 302 a,b,c. Team Management	7
Nursing 303 a,b,c. Neuro-Psychiatric Nursing	10
Nursing 305 a,b,c. Obstetric Nursing	8
Nursing 315S. Public Health and Public Health Nursing	11
Fourth Year	
Nursing 318. Professional Nursing	3
Electives. (At least 6 credits in courses chosen from the liberal arts departments, including English 6, Sociology 3, and electives in Music and Art)	27
Physical Education	

PHILOSOPHY OF DISASTER NURSING

The beliefs of the Skidmore College Department of Nursing about citizenship and professional responsibility in a disaster are embodied in the following statement:

> Disaster of an enemy-imposed nature has as its objective the destruction of lives, the destruction of an economy, the destruction of a political system, and the destruction of other social institutions. The destruction of these basic structures in a society constitutes victory in a war of ideologies. This premise challenges the citizenry to prevent such destruction, and the principal answer to the challenge is education of its members in the philosophy and principles of a political democracy. The advantages, responsibilities, vulnerability, and strengths of such a governmental system must be taught in the framework of history, not as a static accomplishment, but rather as a dynamic process which fluctuates and reveals the heights to which man can rise and the weaknesses to which he can succumb. The citizenry must learn that it is not a system of government that has discovered all the answers, nor is it free from challenge, but rather it is the best social structure yet developed that provides a framework for man's continuous search for truth, understanding his relationship to God, and developing his potentials for constructive ends.
>
> The Department of Nursing faculty believes that beyond citizenship responsibilities the nursing profession has a special kind of health service to render to society. We are agreed that nurses give essential service to victims in disaster. This essential service is a composite of knowledge and skills inherent in the more usual practice of nursing and is adapted to meet the needs of disaster victims.

FACULTY GOALS AND ACTIVITIES

The goals and tasks that the nursing faculty set for itself can be deduced from the activities and objectives that it established for the project. Initially, these activities and objectives were listed as:

1. To study the problems created by disaster conditions for the purpose of selecting essential content that would enable the nurse to function effectively during a catastrophe.
2. To orient the members of the faculty in nursing to this content and to stimulate them to utilize it in the teaching of existing courses.
3. To develop and use teaching methods and evaluation tools pertinent to functional learning in this area.
4. To study ways of incorporating and coordinating disaster nursing content throughout the curriculum of the Department of Nursing.
5. To develop among all the members of the faculty in nursing a philosophy about civil defense and disaster preparedness which will represent considered judgment about citizenship and professional obligations to society.

When the period of the project was extended, the following activities were added to the original list:

1. To revise previously selected content in light of changing conditions, policies, and developments of national Civil Defense and mobilization plans.

2. To provide further opportunities for members of the faculty to attend courses in Civil Defense planning and mass casualty care.

3. To continue the use of teaching methods and evaluation tools previously tried in order to reach some conclusions regarding their effectiveness.

IDENTIFICATION OF CONTENT

From the beginning of the Skidmore study, the responsibility for its leadership was vested in a full-time member of the faculty in nursing. Under her chairmanship, a committee on disaster nursing, with rotating membership, served as a study group and steering committee. The recommendations of this committee were submitted to the faculty in nursing.

The Committee on Disaster Nursing undertook a curriculum analysis to determine what disaster nursing content was already in the curriculum and what content would have to be added. In the course of this study, it developed several series of definitions, assumptions, and statements of facts, which served as guides for the analysis and for the planning that followed it.

As a first step in this study, the committee devised two sets of materials: (1) an elaborate outline of those clinical judgments which the committee deemed essential in the screening and care of casualties and of the activities involved in making such judgments and (2) outlines of the content of the courses taught during the freshman year (devoted largely to science courses) and the sophomore year (devoted to clinical nursing courses). Each committee member then accepted as an assignment the matching of the disaster nursing items with the specific content taught in a course or courses. It was soon decided that this method was cumbersome, time-consuming, and too broad in scope for the committee's purposes. Difficulties were encountered in delineating the content from the physical, biological, medical, and behavioral sciences that contributes to disaster nursing as differentiated from standard nursing practice. The difficulties met in reviewing the clinical nursing courses were somewhat fewer, but they existed. The premise was accepted that the science courses are essential foundation courses and that disaster nursing is a modification and an extension of the standard practice of nursing. Accordingly, it was decided to abandon work on the science courses and to use the clinical nursing courses as a starting point of the curriculum analysis.

The first product of the study consisted of three lists of content areas: (1) areas inherent in professional nursing and also pertinent to disaster nursing; (2) areas geared to standard practice but, as taught in the current curriculum, inadequate for disaster nursing preparation; and (3) areas of disaster nursing content not present in the current curriculum.

The areas of knowledge and skills inherent in professional nursing and also pertinent to disaster nursing were:

1. Ability to recognize pathologic states (both physiologic and psychological) and to anticipate their possible courses.
2. Ability to recognize and understand the significance of early signs, symptoms, and combinations of signs and symptoms; changes; and the complications that are most likely to occur, in terms of particular diagnoses, responses, and circumstances.
3. Knowledge of therapeutic principles and techniques.
4. Knowledge of factors essential for carrying out therapeutic techniques (e.g., information about the general status of the patient and the equipment and movement, preparation, and positioning of the patient for particular therapeutic measures).
5. Knowledge of the purpose of therapeutic measures and the possible responses to each measure, and ability to recognize untoward reactions.
6. Ability to evaluate the effectiveness of first aid measures and therapies with respect to medical, nursing, and psychological objectives.
7. a) Familiarity with medical equipment and supplies, including an understanding of which elements or parts are essential for their effective operation; and an ability to improvise.

   b) Ability to predict the rate of use of equipment and supplies and the future needs for equipment and supplies at the patient level.
8. Knowledge of organizational techniques for facilitating the provision of care to patients.
9. Knowledge of and experience in communicating medical information concisely and accurately.
10. A sound perspective of the value of medical records, and ability to keep such records.
11. Ability to supervise and make effective use of auxiliary personnel.

The areas of the curriculum geared to standard practice but inadequate for preparation in disaster nursing were:

1. First aid principles and techniques.
2. Emergency treatment and lifesaving procedures. (Theory and experience.)
3. Types of traumatic injuries, their pathogenesis, and the principles and techniques involved in their management. (Differential study.)

4. Effects of ionizing radiation.

5. Individual and group response to severe stress.

6. Leadership and organizational principles and practices related to health agencies and large groups.

7. Current world trends and problems related to the responsibilities of citizenship.

The areas of disaster content nonexistent in the curriculum were:

1. Types and consequences of problems created by natural and thermonuclear disasters.

2. The theory and nature of nuclear bombs and of chemical and biological warfare.

3. The organizational structure and responsibilities in times of disaster of the American Red Cross and Civil Defense agencies.

4. Local emergency and disaster plans.

5. The different types of casualties in natural and wartime disasters.

6. The principles of planning and organization, and the resources needed, for meeting disaster problems.

7. The philosophy and principles of and organization for medical care in disasters.

8. Individual and group responses to mass disaster situations.

9. Principles and techniques of nursing care of mass casualties.

10. Public health problems of disasters and their management.

11. Effects of radiation fallout.

12. Standardized equipment designed for mass casualty situations, and ways of improvising supplies and equipment.

PLACEMENT OF CONTENT

A comparison of the disaster nursing content that was being or should be taught with the objectives and content of the courses in the current curriculum led to several conclusions:

1. Disaster nursing could be taught at progressive levels, with each level being coordinated with the succeeding level for cumulative effect.

2. The disaster nursing content identified as essential was related to the objectives of the current courses and could be introduced into these courses in two ways:

   a. The areas of content that are shared with standard practice and those that require a simple modification or amplification of current content could be scattered through the clinical nursing courses in places where they were appropriate to the primary subject matter.

   b. Content that did not lend itself to integration with other subjects could be presented in units of instruction within the framework of two current courses, "Medical, Surgical, Pediatric Nursing" and "Team Management."

INTEGRATION OF CONTENT

To illustrate how disaster nursing content was integrated into the regular nursing courses by the scatter method, a few of the changes that were made in the course "Communicable Disease and Long-Term Illness Nursing" are cited. Some content, notably that related to the basic aspects of biological warfare, was added to this course. Some of the content already in the course was given additional emphasis and presented in the light of its applicability to disaster nursing as well as to standard nursing practice. Included in these reinforced subjects were tetanus and its prevention, the causes and means of preventing the various types of food poisoning, and household measures for purifying water. Concepts concerning the adaptability of organisms to their environment and the implications of these concepts for disaster nursing were also stressed.

The revisions made in the course "Medical, Surgical, Pediatric Nursing" might also be listed. Although the unit on first aid and emergency care, which was already in this course, was utilized for disaster-focused instruction, content applicable to disaster nursing was also integrated into other parts of the course. For example, the basic concepts relating to ionizing radiation were introduced into the classes in surgical nursing. In the medical nursing classes, stress was placed on acute pulmonary edema and other medical emergencies. Safety and accident prevention for children of various ages and the medical and surgical emergencies that are peculiar to children were emphasized in the pediatric nursing classes.

In the nonclinical course "Professional Nursing," given in the senior year, the problems faced by the profession in preparing for and meeting its obligations in disaster situations were included among the discussion topics. A student project introduced in this course was the preparation of a statement of philosophy about nursing in disaster.

THE DISASTER NURSING UNITS

As has been stated, essential disaster nursing content that did not lend itself to interpolation in the regular nursing classes was presented in two units of instruction. One of these units was on first aid and emergency care; the second, called "Nursing in Disaster Situations," was focused on the organizational and other aspects of large-scale disasters.

First Aid and Emergency Care

Prior to the NLN project, the course "Medical, Surgical, Pediatric Nursing" had contained a unit on first aid and emergency care. The plan developed in the project called for the retention of this unit in a revised form. The instructional time was increased to 14 hours (plus one hour for a pretest) distributed over a 15-week period that was placed later in the course, i.e., during the second half of the sophomore (first clinical) year.

The continuation of the unit in the course permitted the coordination of content on first aid and emergency care with the content being taught in the concurrent classes in the medical-surgical nursing core. The increased knowledge and experience of the students that resulted from its later placement in the course made it possible to increase the depth and complexity of the content. Although the first aid principles and techniques taught in the American Red Cross First Aid Course served as a starting point, the content was advanced to a professional level.

Pretest.--So that the level of the starting point might be approximated, a pretest was administered immediately prior to the unit. The following questions are examples taken from this test.

1. Check all of the following objectives which are within the scope of first aid.
   a. accident prevention
   b. to reduce pain
   c. to reduce fractures
   d. to cure infections
   e. to prevent complications of injury
   f. to establish priority of action

2. The most difficult type of bleeding to control by first aid measures is:
   a. arterial bleeding.
   b. venous bleeding.
   c. capillary bleeding.

3. One basic factor which differentiates the immediate situation of gross arterial bleeding from gross venous bleeding is:
   a. the difference in the time factor in reduction of blood volume.
   b. the body's capabilities for adaptation are greater in arterial bleeding.
   c. an air embolism is more apt to occur in arterial bleeding.
   d. vasoconstriction does not occur in veins.

4. The method of choice to control bleeding in first aid situations is:
   a. a tourniquet.
   b. a direct pressure dressing.
   c. digital pressure.
   d. an immobilizing bandage.

(Questions 5-12 omitted.)

13. The most effective way to preserve body heat in an attempt to prevent shock when the victim is out in the open is to:
    a. cover him with a coat or blanket.
    b. give him hot drinks if he is conscious.
    c. put warm bricks or similar material along side his body.
    d. put protective material under and around him.

14. An unconscious person should be given:
    a. a stimulant to drink.
    b. sips of black coffee.
    c. ice chips by mouth.
    d. nothing by mouth.

15. Artificial respiration is an appropriate first aid measure when:
    a. the victim is gasping for breath.
    b. the larynx is obstructed.
    c. the pulse is palpable but respirations are absent.
    d. there is a large wound in the chest wall.

16. If you were called to a neighbor's because "the baby can't breathe," which of the following would be most appropriate to do first?
    a. start artificial resuscitation.
    b. hold the baby by the ankles with head down.
    c. ask what had preceded the difficult breathing.
    d. investigate the baby's mouth and throat for an obstructing object.

17. A drowning child has just been rescued unconscious from a swimming pool. The first thing the rescuer needs to do now is to:
    a. listen for the child's heart.
    b. run and get an oxygen tank and resuscitator.
    c. put the child over a barrel to drain the lungs.
    d. start artificial respiration measures.

18. An unconscious man is found in a closed room with the gas jets open but not lit. The first thing to be done is to:
    a. turn the gas off and immediately begin mouth-to-mouth resuscitation.
    b. open the window and then light the gas jets.
    c. turn the gas off and open the window.
    d. turn the gas off and remove the victim from the room.

19. In case of a compound fracture, a protruding bone should be:
    a. flushed with large quantities of water.
    b. cleansed with an antiseptic.
    c. pushed back into position.
    d. covered and immobilized.

20. In first aid the purpose of splinting a fracture is to:
    a. pull the bone fragments apart.
    b. realign the bone fragments in their original position.
    c. prevent motion of the bone fragments.
    d. prevent alignment of the fracture.

(Questions 21-28 omitted.)

29. A dog bite may cause:
    a. tetanus.
    b. gas gangrene.
    c. rabies.
    d. sleeping sickness.

30. If there is obvious evidence of a head injury, the position of preference for this victim is:
    a. feet raised above the level of the heart.
    b. sitting straight up.
    c. supine with the head slightly elevated.
    d. prone with the head slightly lower than the heart.

31. A neighbor states that she is delivering a baby. Shortly after, a newborn baby is seen lying still in the bed. The first thing to do is to:
    a. tie the cord in 2 places near the baby's abdomen and cut the cord between the ties.
    b. pull on the cord to help remove the placenta.
    c. clear the baby's mouth of mucus and attempt to make the baby breathe.
    d. elevate the foot of the bed and try to make the mother comfortable.

32. When an accident victim's behavior is erratic and unreasoning, the first aider is most likely to obtain a constructive response by:
    a. restraining the victim.
    b. matching voice tone and replies to the victim's.
    c. firm authoritative voice tone and action.
    d. treating the victim's injuries and keeping him separated from others.

33. A large heavy crate slipped while being unloaded from a truck. The left upper leg of one of the men was struck and pinned between two crates. There were some scratches on the leg, but no serious lacerations. He received competent first aid yet was in shock on arrival at nearby hospital. Which combination of factors best explains this man's state of shock?
    1. extensive damage of muscle
    2. blocking of normal circulatory continuity
    3. extravasation of body fluids
    4. contusion extending from knee to hip
    5. hematoma formation

    a. 1 and 3
    b. 2 and 5
    c. 1, 2, and 4
    d. 3, 4, and 5

34. The typical state of consciousness of an individual in shock from injury is:
    a. alert.
    b. unconscious.
    c. semi-conscious.
    d. conscious.

35. When an injury itself has not caused undue loss of circulating blood volume, what other factors may cause shock?
    1. pain
    2. fear
    3. diaphoresis
    4. sight of mutilation

    a. 1 and 3
    b. 2, 3, and 4
    c. 1 and 4
    d. all of these

(Questions 36-42 omitted.)

43. To improvise an adequate splint for the victim with a fractured tibia and fibula which of the following could be used? (Check all that are appropriate.)
    a. bundle of newspapers
    b. coat hanger
    c. blanket
    d. 3-foot tree limb
    e. muslin bandage

44. An auto accident victim is unconscious and is bleeding about the face and mouth. One of the major concerns of the first aider in this case would be to:
    a. determine whether the skull was fractured.
    b. clear the mouth to insure a clear airway.
    c. cleanse and dress the wounds.
    d. determine whether the jaw was fractured.

45. Giuseppi Gianesi, forty-five years old, works at Lockheed Aviation Corporation, on the midnight shift, as a skilled worker, fitting on and testing propellers of high-power bombers. He works on an elevated platform thirty feet high.

    You are the nurse in charge of the medical department, with a doctor on call during this shift. At four A.M. you receive an urgent phone call, stating that there has been a serious accident and you are to come to the propeller division immediately.

    When you arrive at the scene of the accident, you observe the following--a crowd of workers assembled around Giuseppi, who is lying on the floor next to the platform from which he has fallen. He is groaning and appears to be in a considerable amount of pain. His right hand and wrist is covered with bright red blood, tissue is torn, and on closer observation the fingers and hand appear to be mangled. Giuseppi's skin is cold and clammy, his eyes are bright, and he has profuse diaphoresis. He keeps mumbling over and over, "I don't know how it happened."

    As a registered nurse, identify step by step what you would do from the time of the report of the accident until the patient is under the care of a physician.

Content.--The central objective of the unit was to provide students with the opportunity to increase their understanding of the pathogenesis of trauma and behavior associated with trauma as a basis for considered judgment and professional action.

The outline of the subject areas of the unit, as it was taught in 1961, is as follows:

I. Introduction — 1 hr.
    Orientation to unit plans (Bibliography, out-of-class assignments)
    First aid and emergencies--definitions, need for competency
    Comparative roles of lay person and professional person performing first aid
    Accident statistics in United States
    Characteristics of an accident scene
    Principles of first aid

II. Common occurrences requiring first aid measures 1 hr.
    Foreign bodies in the eyes and ears
    Eye injuries, insect bites, poison ivy, etc.
    Sunstroke and heat exhaustion

III. Respiratory emergencies 2 hrs.
    Differentiating the causes of anoxia
    Clinical clues for judgment
    Resuscitation methods (film - "Mouth to Mouth Resuscitation.")
    Emergency tracheostomy (Discussion)
    Evaluation and follow-up care

IV. Hemorrhage and shock from traumatic injury 1 hr.
    Differential characteristics
    Clues for judgment
    First aid and emergency techniques
    Basic factors in selection of replacement therapy

V. Principles of surgical procedures for traumatic injuries 1 hr.
    General principles of wound management
    Priority factors in performing surgery
    Principles of debridement of various types of wounds
    Ligation of bleeders and circulatory considerations
    Principles of open and closed treatment of wounds

VI. Considerations in the use of anesthesia and analgesics in traumatic injury 1 hr.
    Characteristics of pain in traumatic injury
    Variables and complications of anesthesia in mass casualty situations
    Dosages and effects of narcotics in traumatic injury

VII. First aid and early management of traumatic fractures 1 hr.
    Mechanical factors of the trauma and resulting fractures
    Methods of recognizing and of presupposing a fracture
    Methods and principles of splinting and bandaging
    Definitive management of long-bone fractures in mass casualty situations

VIII. Summary of management of mechanical injuries in disaster situations 1 hr.
    Causative factors in disaster situations
    Missile injuries and wound ballistics
    Clinical and environmental considerations
    Priority in sorting through 1st and 2nd echelons

IX. Principles and techniques of transportation and evacuation of the injured 1 hr.

X. Burns 2 hrs.
    Degrees and their implications
    Pathogenesis
    Immediate and definitive care

XI. Casualty care (Student demonstration) 2 hrs.

Sample Lesson Plan
First Aid - Critical Body States 2 hours

Critical States	Causes	Clues for Judgment	First Aid Techniques	Follow-up
I. Anoxia - a respiratory emergency. Symptoms and signs: early - mild dizziness, shortness of breath, pain in the chest, rapid pulse, cyanosis, impairment of consciousness, pupils dilate.	A. Respiratory obstruction. Clinical picture: Individual won't lie flat, exerts terrible effort to inhale, keeps head thrown back in hyperextension, eyes tend to bulge. His abdomen bulges as the diaphragm moves downward, but since no or little air gets thru, the lower chest and clavicular space are sucked in.	1. Obvious circumstances of situation: was individual eating - working with pins or tacks in his mouth - child with marbles, etc.?	Child victim: hold upside down by the legs and strike sharply on the back between the scapulae.	If first aid therapy is successful but there is chance that foreign body caused a laceration or severe trauma, have victim examined by a doctor.
		2. Information from individual and/or witnesses. Nature of obstruction.	Adult victim: place on bed or table prone with upper half of body extending over the side vertically and strike sharply on the back.	
		3. Degree of symptoms.	If possible, get patient to cough at the same time you strike him.	If victim in medical hands, give support to family.
		4. Reaction of individual: Can he cooperate? Can he work with you?	If not immediately successful, get victim to medical aid or vice versa.	
	1. Foreign bodies: food, fluid, mucus, teeth, articles held in the mouth, toys.	5. The longer the foreign body stays in trachea, the more inflammation and swelling can be expected.	Give nature of emergency so personnel can be prepared for immediate surgery.	
		6. Remember anoxia can cause permanent damage as well as death. Make every motion count and don't waste time wondering.	Caution: Do not probe for obstruction unless it can be seen and successfully hooked with the finger. Traumatizing tissue further by probing will cause swelling and more complete obstruction.	
		7. Who in the group best able to help you, and who able to transmit message?		

Critical States	Causes	Clues for Judgment	First Aid Techniques	Follow-up
I. Anoxia (cont'd)	2. Unconsciousness. Large amounts of mucus or vomitus aspirated. Tongue falls back.	8. Cause of unconsciousness? Circumstances. Environmental clues. Witnesses.	1. Prevention by positioning on stomach, side, or at least with head to the side. Loosen clothing, remove dentures, etc. 2. Treatment - Position for drainage. Loosen clothing, cover fingers with handkerchief and pull tongue forward. Stimulate gag reflex with covered fingers, gagging may also bring on cough reflex.	Medical treatment for cause of unconsciousness and more thorough suctioning.
	3. Swelling of trachea and larynx. Anaphylactic shock. Inhalation of ammonia, chlorine, sulphur, dioxide, burns.	Can victim live long enough to reach emergency room or doctor's office? Can doctor arrive on time? Could you do a tracheotomy?	Aspirate with improvised equipment. Ask class what might be found in average home (ear syringe, basting syringe).	Tracheotomy.
	B. Cessation of breathing without respiratory obstruction.	9. Recognition of cause and anticipation of death.	Position, keep patient warm, get medical aid. Remove dentures or anything loose in the mouth.	
	1. Disease or injury to respiratory center in medulla; i.e., polio, concussion of the brain, fracture of skull, high cervical fractures which sever respiratory nerves.			

2. Drugs: barbiturates, opiates. General symptoms: drowsiness to unconsciousness, mental confusion, hallucinations, shallow breathing, slow, weak pulse.	10. How long ago did ingestion occur? Will an emetic accomplish anything? Opiates cause contraction of pupils; barbiturates do not.	1. Empty stomach by whatever means is at hand. Emetics: warm salt H_2O in large quantity, mustard in H_2O, soda and H_2O, soapy H_2O. 2. Artificial respiration. 3. Keep individual warm. 4. Remove to hospital.	Medical therapy Fluids IV Stimulants Shock therapy O_2 therapy
3. Electric shock. a) Direct paralysis of respiratory center by the shock. b) Secondary effect upon the brain by lack of O_2 due to impaired cardiac output which is caused by direct effect of shock on heart.	11. Can current be shut off easier and quicker than victim can be removed from source of shock? Did electric shock also cause a fall and other injuries? What is insulating material? If ground is wet, what can you use to stand on?	1. Remove victim from source of shock. Keep warm. 2. Artificial respiration.	Hospitalize.
4. Lack of oxygen in air. Deep wells, long unused tanks, air-tight houses with open fires. 5. Toxic gases. Carbon dioxide, carbon monoxide, ammonia.	12. Is there a possibility of long-stagnant air? Victim does not suffer; symptoms have sudden onset. 13. What are the legal implications?	1. Remove to fresh air. 2. Keep victim warm. 3. Artificial resp. 4. Medical aid. O_2 by inhalator or resuscitator.	Hospitalize or medical therapy in home.
C. Interference with Mechanics of Respiration. Smothering, buried in debris, chest wounds.		1. Remove cause of interference. 2. Artificial resp. Chest wounds will be discussed tomorrow.	

Out-of-Class Assignments.--In addition to classroom and clinical instruction, discussion, reading assignments, and the viewing of films, students were given written out-of-class assignments. One such assignment required the student to select a picture of an accident from a newspaper and write an account of what she would have done had she been the first person at the scene.

Another such assignment read as follows:

> "Select one type of traumatic injury common to disaster situations. State the limitations in scope of the injury to be discussed. For example, if fractures are the type of injury selected, then the limitation may be fractures of extremities. Another example might be selection of the topic "burns," and the limitation might be burns of more than 10% of the body surface.
>
> "Write a description of the physiological problems created by this injury and a standard type of treatment to meet these problems. The treatment and care are to be suitable for large numbers and at the hospital level. Describe in specific detail the clinical judgments regarding an individual's condition and the implementation and effectiveness of therapy that the nurse needs to be able to make."

Nursing in Disaster Situations

The second unit, "Nursing in Disaster Situations," consisted of six hours of instruction designed to help the student prepare for the leadership role that is expected of the nurse during a disaster. This objective is obviously in harmony with the goal of the course entitled "Team Management," which is designed to prepare the student for the leadership responsibilities of modern nursing. Accordingly, this disaster nursing unit was incorporated in the team management course, which is given during the junior (second clinical) year.

Content.--In 1961, the content of this unit was organized as follows:

I. Purpose and overview of classes in disaster — 2 hrs.
  Disaster - characteristics of natural and enemy-imposed disaster
  Functions of ARC and FCD
  Civil Defense Organization: federal ----> state ----> local
  General discussion of history of societies and destructive forces
  (Bibliography and pamphlets distributed; out-of-class assignments)

II. A. The cold war today - a cause for this and future generations? — 2 hrs.
    U.S. vulnerability
    U.S. strength
    Types of warfare

  B. Preservation of civil authority - a means of achieving victory
    Civil Defense - an extention of authority and duty in each existing area of civil life. Areas of need. What are the essentials for social survival?

C. Essential factors in providing medical aid for large numbers of casualties

D. Pattern of emergency medical services

E. What the nurse has to offer

III. A. Group reactions to disaster 2 hrs.

1. Chaos and disorganization of daily life pattern
2. Isolation, gregariousness, communication, leadership
3. Convergence
4. Panic

B. Individual reactions

Group Projects.--In this unit, the students, usually in groups of 12, were required to design and present a project to illustrate the basic principles and methods that would be utilized in some type of disaster situation.

In one such project, the students envisioned a major fire on the women's medical unit and worked out the control measures appropriate for an electrical fire, the behavior that might be expected from patients and personnel, and the leadership and evacuation plans. The problems of the situation were outlined and graphed in detail. A blueprint of this patient unit was drawn to scale. An analysis was made of a typical day's staffing and the status of individual patients. An evacuation plan was presented and illustrated with charts. The organization of personnel and their individual assignments were outlined, and the methods of patient movement were presented. The students identified the principles which they had used and substantiated their choices.

The theme of another project was a fire explosion in a nursing home in a suburban community. The methods of personnel organization and assignment, evacuation from the home, first aid, sorting, and traffic control and the community resources for welfare assistance and medical treatment were included in this project.

The community management of a serious train wreck was the theme of another group. The outskirts of a New Jersey town of 35,000 population was chosen for the location of the disaster. Governmental and private agency officials were contacted and used as resource persons. Official maps of the city and the highway system, the community disaster organization, and private agency disaster plans were obtained and used as a basis for the preparation and the presentation of this project.

Another student project concerned a thermonuclear disaster and the role of a public health nurse in a secondary aid station 15 miles from the area of complete destruction. Students, with the help of one member's parents, made tape recordings of appropriate sound effects. Wound moulages were worn by the "casualties," and a wide variety of first aid and emergency measures were demonstrated. The feelings, fears, and reasonings of the nurse during this performance were narrated from the background. The leadership and organizational aspects of the nurse's role in the absence of a physician were included.

These presentations proved to be such effective teaching devices, as well as good learning experiences, that arrangements were made for the sophomore students to view them. The practice was also established of sending notices about them two weeks in advance to the director of nursing, so that it would be possible to schedule the presentations as part of the hospital nursing service's inservice program.

CIVIL DEFENSE EMERGENCY HOSPITAL TRAINING EXERCISE

The Skidmore faculty in nursing were particularly aware of the need for members of the health profession to be familiar with the purposes, organization, and equipment of a Civil Defense Emergency Hospital. Accordingly, in 1959, the faculty cooperated with the Department of Nursing Education of Teachers College, Columbia University, in sponsoring a training exercise in the setting up and operation of a Civil Defense Emergency Hospital. The exercise was conducted by the Medical Services of the New York State Civil Defense Commission, and use was made of a mobile packaged Emergency Hospital that can be set up in buildings to supplement the permanent hospital installations.

Some of the faculty members, as well as the sophomore and junior students, were active participants in this exercise. The sophomore students had completed the first course in clinical nursing and were in the second week of the medical-surgical-pediatric nursing course. One-third of the juniors had completed the course in team management, one-third were currently taking the course, and one-third had not yet begun it. Invitations were also sent to members of the Medical Center community and to representatives of the other collegiate schools of nursing and the nursing agencies and organizations in the New York area.

A two-hour orientation session planned and conducted by Civil Defense personnel was held the week preceding the exercise. This session was attended by all the participants. No other classes or discussions were held with the nursing students to prepare them for the training exercise specifically.

The focus of the training exercise was on organization, supply, and communication. The realities of casualty care were simulated only to the degree that they would contribute to the attainment of the primary goals.

The first portion of the training period was devoted to group instruction by Civil Defense personnel, the distribution of the supplies and equipment to predesignated sections, and the setting up of the sections for operation. The second part was devoted primarily to putting the hospital in operation. The final period was given over to a general critique of the exercise.

Evaluation

In evaluating the training exercise, the faculty noted that it provided learning opportunities for both faculty members and students that are not available, or not available to such a degree, in usual settings. Among the advantages were:

1. An atmosphere in which a multidisciplinary group can learn together without concurrent demands to meet the needs of patients.

2. The visibility and accessibility of the sections of the hospital, which permitted more direct learning relative to the physical arrangement than can be provided in the more complex permanent hospital.

3. The simplified and controlled organizational structure, which showed the direct effect of the structure on the functioning of individuals much more clearly than is apparent in the more complex permanent hospital.

4. The availability of equipment and supplies that are especially designed or organized for use in an emergency setting and that are not available in a permanent installation.

5. The opportunity for various members of the health team to work together toward common objectives, to evaluate their efforts and engage in deductive reasoning together, and to put standardized procedures into operation. This opportunity is not a unique one, but the extent to which it was capitalized on during the training exercise was notable.

The additional values that the faculty members gained from the experience were identified as:

1. A feeling of greater confidence in their own ability to function as leaders in a disaster setting.

2. A more knowledgeable foundation for integrating certain aspects of disaster nursing throughout the curriculum.

3. A renewed realization and broader perspective of the need for curriculum development in the area of disaster nursing.

4. The opportunity to evaluate the procedures and equipment of the New York Civil Defense Improvised Emergency Hospital.

The students evaluated the exercise in a group discussion class. The opinion was unanimous that the training exercise had been very worthwhile and should be repeated for other groups. The points brought out in discussion were:

1. The training exercise made the students feel more capable of functioning in this type of an emergency hospital.

2. The techniques and standard procedures of the exercise had not been difficult to learn.

3. The students were particularly aware of and enjoyed the close team relationship between themselves and the physicians. They enjoyed the sense of responsibility and the expectations that the physicians and the other students had of them.

4. They were impressed with the physicians' earnestness and organizational skill.

5. Many of the physicians had assumed teaching roles and had taught them a good deal about the evaluation of injury and the selection of appropriate treatment.

6. The use of completely untrained personnel was very limited in any treatment section because of their lack of knowledge of medical vocabulary, equipment, and supplies.

No attempt was made to evaluate the performance of individual students during the exercise. However, the faculty members did observe the performance of groups of students. The following achievements and reactions were noted:

1. The earnest and serious approach of the students to the entire training exercise was an indication of the very real teaching potentials of this type of exercise.

2. There was evidence of a spirit of teamwork and a sense of individual responsibility among the students and medical officers.

3. All the students accepted leadership from their section heads quite well.

4. The students familiarized themselves with and followed the standard operational procedures set up by the Civil Defense personnel. They also investigated and tried out much of the equipment and many of the special types of supplies.

5. In some of the situations, the body mechanics of the students was poor.

6. The junior students quite readily established themselves in the roles of charge and staff nurses. Those in the charge nurse roles, however, exhibited certain limitations. In general, they had some difficulty in anticipating supply needs, and the exercise did not continue long enough to provide them with opportunities to learn from experience in this area. They were vague about their responsibilities to the chief nurse and did not take sufficient initiative in communicating to her their problems and needs. Also, owing to the absence of patients with needs to be met and their own need to practice the procedures, their opportunity to delegate and give follow-up supervision was limited.

7. The students participated constructively in the critique.

In view of the advantages accruing from this training exercise, the faculty came to the conclusion that efforts should be made to continue its use as a learning experience for students and faculty members. However, because of the required expenditures of time, personnel, money, and facilities, it was decided that the exercise should be timed so that maximum use could be made of it. Accordingly, it was agreed that attempts should be made to arrange for such an exercise every two or three years as a project of the entire educational program (rather than of a particular course) in which students at various academic levels would participate.

Other Training Exercises

Opportunities have been grasped for utilizing similar training exercises sponsored by other groups. During the early spring of 1961, the Saratoga Springs community leaders sponsored the same training exercise for local medical and lay personnel. The Skidmore students were invited to participate, and many did so. The seniors who were majoring in nursing had participated in the 1959 exercise but had carried out nonprofessional roles because they were just starting medical-surgical-pediatric nursing courses. This second experience in the training exercise was very profitable for them.

In May, 1961, the Manhattan Veterans Administration Hospital conducted a similar Emergency Hospital Exercise at the Manhattan Beach Civil Defense Training Center. The Skidmore students who were having surgical nursing clinical experience at the Veterans Hospital participated in this training exercise.

INVOLVEMENT OF HOSPITAL PERSONNEL

The multidisciplinary participation in the Emergency Hospital Training Exercise was of benefit not only to the educational program in nursing but to University Hospital, where the Skidmore students receive the major share of their clinical instruction. In recognition of this, the hospital administration decided to sponsor a similar exercise for its own personnel, in which the Skidmore students could participate.

Note might also be taken of the arrangements that were made to involve the nursing service personnel in other aspects of the disaster nursing project. At the beginning of the project, its nature, purposes, and structure were described at a head nurses' meeting and at an inservice program meeting of graduate nurses. Nursing service personnel were invited to attend several film showings that were held during the students' classes. Also, as has been stated, nursing service personnel were invited to the student presentations given in connection with the unit "Nursing in Disaster Situations." The interest of staff members in these presentations has been demonstrated by their increasing attendance and by the questions and comments they have contributed to the discussions that follow.

EVALUATION

Certain complications confronted the faculty in its attempts to evaluate the disaster nursing project. First, because the area of disaster nursing cannot be totally isolated from the program as a whole, it was difficult to determine with any exactness which learning experiences contributed most to student effectiveness in performance. Second, the use of pure research methods was limited by the financial structure, the facilities, and the overall faculty responsibilities of the project director.

The following devices and methods were used to measure the students' progress in knowledge of disaster nursing and thereby to determine the effectiveness of the disaster nursing learning experiences:

1. The NLN Achievement Test in Disaster Nursing.
2. Evaluation of the out-of-class written assignments given in the unit "First Aid and Emergency Care."
3. An examination covering material in the unit "First Aid and Emergency Care."
4. An out-of-class examination given to the students during the unit "Nursing in Disaster Situations."

Examination in First Aid and Emergency Care

The 1961 final examination in first aid and emergency care contained the following questions:

1. From the following list, which group correctly represents basic principles of first aid treatment?
    - a. Get a picture of the whole before starting treatment.
    - b. The manner and attitude of the first aider can materially affect the behavior of others.
    - c. The primary reasons for keeping an injured person warm are for comfort and to prevent pneumonia.
    - d. A compound fracture takes priority for treatment over investigating a blood-soaked coat sleeve.
    - e. Fluids to drink should be given only to those people fully able to swallow, and without any evidence of abdominal injury.
    - f. Speed is the single most important factor in transporting the injured,

    1. a, c, and d
    2. b, c, and f
    3. a, b, and e
    4. b, d, and f

2. From your knowledge of the most frequent causes of accidental deaths in the home, which one of the following would most substantially reduce the fatalities?
    1. a well-equipped medicine cabinet for administering first aid.
    2. poisonous substances kept in one place separate from anything taken internally,
    3. willingness of the family to carry out the principles of good housekeeping.
    4. all firearms kept out of sight and under lock and key.

3. If you discovered a neighbor unconscious in his home, what would be the most essential action to take before calling the doctor?
    1. Examine the person and environment for clues of the cause of unconsciousness.
    2. Get the person into "shock position."
    3. Wrap him in blankets.
    4. Telephone another neighbor to come help.

4. While on a picnic, an insect flies into your friend's ear; which of the following would you do first?
   1. Put your friend in the car and drive him to the nearest doctor.
   2. Cover a match stick and see if you can remove the insect.
   3. Go to the lake and have your friend hold that side of his head under water.
   4. Pour a tepid liquid into the ear until the external canal is full to overflowing.

5. To effectively render first aid to an individual who has come in contact with a live electric wire, the rescuer must first:
   1. separate the victim from the source of electricity.
   2. put something warm around the victim.
   3. provide insulation between the electric current and himself.
   4. cut the wire at a safe distance from the victim.

6. The two principal aims of first aid treatment to a victim of severe electric shock are to:
   - a. stimulate the heart.
   - b. deliver oxygen to the lungs.
   - c. maintain blood volume.
   - d. prevent further tissue damage.
   - e. minimize loss of body heat.

   1. a and d
   2. b and e
   3. a and c

7. The etiology of anoxia from electric shock is based on:
   - a. shock to the mechanics of respiration.
   - b. paralysis of the medulla.
   - c. reduced cardiac output.
   - d. peripheral circulatory collapse.

   1. a and c
   2. b and d
   3. b and c
   4. a and d

8. From which of the following would you expect to obtain the most clues as to the etiology of anoxia?
   1. degree of symptoms.
   2. circumstances of the situation.
   3. reaction of the victim.

9. List four different types of pathogenesis and an example of each which can cause a respiratory emergency.

10. A victim of drowning is on his back. The next action to take in preparing to give mouth-to-mouth resuscitation is:
    1. move victim into position so gravity will help drain water from the lungs and stomach.
    2. take the pulse and observe for cyanosis.
    3. lift the neck and tilt the head backward with the jaw forward.
    4. check the mouth for foreign material with a sweeping motion of the fingers.

11. The minimum rate of breathing into an adult victim's mouth should be:
    1. 10 per minute.
    2. 16 per minute.
    3. 20 per minute.

12. The evidence used that air is actually reaching the lungs during mouth-to-mouth resuscitation is:
    1. improvement in victim's color.
    2. independent respiratory movements.
    3. expansion of the victim's chest.

13. When administering rescue breathing to an infant, what variation from adult methods are essential?
   - a. position of victim
   - b. force of blowing effort
   - c. protection from infection
   - d. rate of breathing efforts

   1. a and b
   2. a, c, and d
   3. all of these
   4. b and d

14. Air that is blown into the stomach during the process of mouth-to-mouth breathing can be:
   1. ignored until spontaneous respirations begin.
   2. removed by putting gentle pressure over the stomach.
   3. sucked out by the rescuer in the period of the victim's expiration.

15. Name three factors which can prevent air from the rescuer reaching the lungs of the victim in the performance of mouth-to-mouth resuscitation.

16. From the following accident situations, which combination of factors would you consider most indicative of a critical body state?
   1. an individual with a vertical laceration approximately 6 inches long and ½ inch deep along the anterior aspect of the thigh.
   2. an individual who complains that both legs are numb and he can't move them.
   3. an alert and restless individual, asking for water, breathing in deep gasps, and whose pulse is 114 and bounding.
   4. an individual walking around the accident scene crying, repetitive in action, and aimless in direction.

17. Two victims of traumatic shock were receiving whole blood transfusions. One transfusion was set at 50 drops per minute and the other was set at 80 drops per minute. Which of the following two victims would receive the slower rate of administration?
   1. victim 66 years old.
   2. victim 26 years old.

18. The physiological rationale for regulating the rate of replacement of circulating blood volume is:
   1. collateral circulation more prevalent in older age groups.
   2. the estimated compensatory range of the heart.
   3. basal metabolic demands vary with different age groups.

19. The basic principle to remember regarding the procedure for reconstituting dried plasma for intravenous administration is that:
   1. the plasma has been irradiated.
   2. a double-ended needle is inserted in the bottle of water.
   3. a high vacuum exists in the bottle containing dried plasma.
   4. an airway assembly is provided in the set.

20. In a mass emergency situation, which blood type will be used for transfusions until facilities for typing and cross matching are established?
   1. A
   2. B
   3. AB
   4. O

21. Of the following injuries, which one could be expected to require the most intensive transfusion therapy to maintain an effective circulating blood volume if all other factors were equal?
   1. Compound fracture of the tibia.
   2. Crushing injury of the lower extremities.
   3. Skull fracture and concussion.
   4. Traumatic amputation of an arm.

22. Other factors being equal, which of the following fluids, by its nature, can be expected to sustain circulating blood volume for the most number of hours?
1. 5% glucose in water.	3. dextran.
2. normal saline.

23. As the nurse in charge of three patients receiving whole blood transfusions and four receiving intravenous electrolyte fluids, you have assigned a practical nurse to watch these patients and their infusions. Which of the following observations would you instruct her to look for in the three patients receiving blood that would differentiate this treatment from the ones receiving electrolyte fluids?
1. swelling of the arm at the site of injection.
2. the rate of flow through the drip bulb.
3. restless discomfort of the patient.
4. complaints of chilling and/or appearance of a rash.

Situation: A professional nurse is at the scene of a factory accident which resulted in 20 casualties. First aid equipment is available, and she has three trained first aid workers to assist her.

24. Which of the following activities which the nurse performed best represents her professional responsibility and contribution to the group?
1. applying a pressure dressing to a bleeding wound.
2. deciding what first aid measures are needed.
3. instructing an assistant in positioning a victim.
4. splinting a fractured leg.

25. The first consideration in preparing casualties with mechanical injuries for transportation to a medical installation should be:
1. protection of the injury.	3. administration of fluids.
2. administration of analgesics.	4. encouraging self help.

26. Strong antiseptics are not recommended for cleansing gross wounds as a first aid measure because:
1. antiseptics are ineffective in preventing infection.
2. the victim will receive antibiotic therapy.
3. the possibility of causing further cellular damage is great.
4. not all accidental wounds are contaminated.

27. Before stabilizing a fractured jaw, it is essential that the victim's mouth be:
1. put in normal alignment.	3. cleared of any loose objects.
2. rinsed out.	4. free of all bleeding.

28. The single most important phase of first aid treatment of a victim with a spinal fracture is:
1. examination for bleeding in the area of the back.
2. appropriate movement and transportation.
3. putting a cover under and over the victim to prevent shock.
4. keeping the head to the side and the tongue forward.

29. Which of the following would indicate that a splint has been applied correctly for a fracture of the femur?
    a. The material used for splinting is not causing direct friction or pressure on the skin.
    b. The splint extends from the thigh to below the knee joint.
    c. The bandages holding the splints are placed on either side of the fracture and near the joints that need to be stabilized.
    d. The splint extends from the waist to well below the knee.
    e. The bandages are tied loosely to prevent any circulatory restriction.
    1. a, b, and c   3. b, c, and d
    2. a, c, and d   4. c, d, and e

30. Other than to control bleeding, dressings are applied to wounds at the scene of the accident primarily to:
    1. keep the victim from seeing his wound.
    2. give the wound support and thus reduce pain.
    3. protect the wound from further contamination.

31. Hospitals that have been involved in caring for the victims of natural disasters have made it obvious that _______ is essential for effective functioning when disaster strikes.

32. List three major types of actions which must take top priority in preparing to receive 20 casualties on a 30-bed hospital unit.

33. To prevent tetanus from becoming a common complication of traumatic injury, an immunization program is instituted in the patient care units of the hospital and in the minimal treatment area. Casualties who have never had any tetanus immunization should receive which of the following?
    1. tetanus toxoid, followed by antitoxin after sensitivity tests.
    2. two spaced doses of tetanus toxoid.
    3. tetanus antitoxin after a sensitivity test.

34. The general principle of treatment for contusion of a kidney is:
    1. conservative management.
    2. surgical repair when the patient's condition permits.
    3. immediate surgical removal.

35. The precordial pain which accompanies serious crushing injuries of the chest can be effectively relieved without also depressing respirations by:
    1. small frequent doses of demerol.   3. large doses of aspirin.
    2. intercostal nerve blocks.   4. strapping the chest.

36. A casualty with a wound of the thigh has a pressure dressing and a splint applied. What is the optimum position of this patient to control bleeding and swelling?
    1. horizontal   3. Fowler's
    2. Trendelenburg   4. injured leg in elevation

Situation:

37. You are assisting with triage of casualties in a receiving area of a hospital in the immediate post-attack period following a thermonuclear blast. The standard Civil Defense categories for priority of treatment are being used. Place the roman numeral of the appropriate category to the left of each type of injury.
    1. closed fracture of the femur.
    2. partial amputations.
    3. contused kidney.
    4. sucking chest wound.
    5. closed fracture of radius and ulna.
    6. third degree burns of both legs, hands, and forearms.
    7. avulsed wound of the head.
    8. second degree burns of hands and face.
    9. penetrating wound of the abdomen.

    Categories

    I. Minimal
    II. Immediate
    III. Delayed
    IV. Expectant

38. One of the casualties has a tourniquet around his upper arm, a blood-soaked dressing on the upper arm extending over his elbow, and the arm carried in a makeshift sling. You must make the decision regarding the next course of action. Select from the following the decision which is most consistent with principles of first aid and casualty treatment.
    1. Remove the tourniquet and evaluate the bleeding.
    2. Change the dressing without disturbing the tourniquet.
    3. Place in Category II without removing either tourniquet or dressing.

39. It is important to remember in considering the effects of missile injuries that the amount of energy imparted to the body upon impact is determined primarily by the missile's:
    1. mass.
    2. contour.
    3. type of material.
    4. velocity.

40. In evaluating a high-velocity missile injury, it is important to remember that:
    1. tissue damage extends far beyond the missile path.
    2. tissue damage is greatest at the point of impact.
    3. tissue damage will be represented by the area directly along the missile path.

41. Which of the following treatment principles recommended for use in the immediate post-attack period would not apply to a local natural disaster situation?
    a. Treatment be designed to preserve life over limb, and function over appearance.
    b. Extensive abdominal wounds be given a low priority for surgery.
    c. Morphine and potent opium derivatives be administered only in medical facilities by qualified personnel.
    d. Ether be the general anesthetic of choice.
    e. All wounds be considered contaminated.
    f. Traumatic wounds primarily involving muscular areas be debrided and left open.
    1. a, c, and e
    2. b, d, and f
    3. a, b, and d
    4. c, e, and f

42. The recommended treatment principles for casualty care following an enemy attack have been followed in repair of a wound of the large intestine. The nurse who changes the dressing should expect to find the wound:
1. left open and surgically packed.
2. sutured, penrose drains, plus a colostomy.
3. debrided and closed in layers except for the skin.

43. One of the principles of debridement concerns the relative priority given different types of tissue. Which of the following tissues is it considered most important to preserve?
1. fascia.
2. skin.
3. intact muscles.
4. subcutaneous tissue.

44. When dressing or debriding a wound which contains loose bone fragments, the nurse should:
1. remove the fragments.
2. preserve the fragments in the wound.

45. When an individual becomes panic stricken and is endangering the stability of a large group, the recommended first aid measures are:
a. gentle firmness and explicit directing.
b. acceptance of the fact that the individual is panic stricken.
c. work through the individual's feelings with him.
d. segregate the panicked individual from the group immediately.
e. reasoning with the panicked individual.
f. appeal to his sense of responsibility to others.
1. a, b, and c.
2. a, b, and d.
3. a, b, and e.
4. a, b, and f.

46. From the studies of behavior during disaster situations, most authorities agree that the state of panic is:
a. an inevitable consequence.
b. most frequent during war-type destruction.
c. characterized by blind flight.
d. characteristic of immature adults.
e. less frequent than generally assumed.
f. very contagious.
1. a, c, and d.
2. b, d, and f.
3. a, b, and c.
4. c, e, and f.

47. Burns may be classified according to depth or extent. State the classification according to depth and briefly describe each.

48. The five objectives of management in burn therapy for any hospitalized burn patient are:

49. On the basis of pathogenesis of burns, rather than individual response to pain, the nurse might anticipate a greater need for analgesics by which of the following patients?
1. first degree burns of hands and arms.
2. second degree burns of hands and arms.
3. third degree burns of hands and arms.

50. Sedation when given to a burn patient is usually administered through the intravenous route. Why?

51. Hourly urinary output is the most important guide in calculating further fluid therapy. The output of an adult must be maintained at between ___ to ___ per hour.

52. If a burn patient averages 150cc urinary output per hour for several consecutive hours, what complication should be anticipated?

53. A patient with combined 2° and 3° burns of chest, head, and both arms is on q20 min. observation for shock. Describe how you would detect the signs and symptoms of shock in this situation.

54. The primary aim in the management of thousands of casualties must be to accomplish the "greatest good for the greatest number." With this aim in mind, calculate the amount of burns and the disposition of the following casualties.

Amt. in %	Category	
		1. 3° burns of face, anterior chest, abdomen, and arms.
		2. 2° burns of lower legs.
		3. Flash burn of face and upper chest.
		4. Flash burn of hands and lower arms.
		5. 2° burns of chest, abdomen, legs, and rt. arm.

Examination in Disaster Nursing

The following is an example of an out-of-class examination that was given during the unit "Nursing in Disaster Situations."

Situation:

There has been an explosion and fire in a nearby office building at 10:30 A.M. The Fire Chief has estimated that there are approximately 275 casualties. Manhattan General Hospital, Columbus Hospital, and University Hospital have been alerted to prepare to receive casualties. Doctor Jackson has ordered Disaster Plan #1 to be put into effect. All department heads have been notified, and casualties are expected to start arriving at the hospital within 20 minutes. It is now 10:40 A.M.

Plan #1 calls for:

1. all casualties to enter the hospital by way of the ambulance entrance.

2. triage to take place in the east and central wing of the clinic floor.

3. treatment of minor injuries to be done in treatment and examining rooms on main floor.

4. discharge of these casualties following treatment to be routed through exit on 2nd Ave.

5. elevator in main corridor to be used for transporting injured from clinic floor to nursing units.

6. all supplies to be transported on service elevator.

7. elevators near Vascular Clinic - smaller of two reserved for transporting patients to the O.R.; the larger elevator reserved for personnel and transfer patients.

8. Nursing units are designated as follows:

M.S. II	Ward 267 - Male Burn Unit Room #268, 269, 270 - Lacerations and general wounds
M.M.	Ward #378 - Male Shock Unit Ward #380a, 373 - Facial and head injuries Ward #380b - Reception of surgical patients transferred from M.S. II
GYN	Ward 489 - Female Burn Unit Rooms 491a and b - Lacerations and various wounds
W.M.	Ward 382 - Female Shock Unit Ward 375 - Fractures Rooms 372, 373 - Facial and head injuries

Patients now occupying these units are to be transferred, discharged, or moved to other rooms on same unit.

9. Central Supply and Stores have pre-prepared cartons of supplies marked for specific situations--"Burns," Shock, etc. Each carton contains supplies for initial treatment of approximately 12 people. They will deliver one carton to each of the designated treatment areas listed above immediately on receiving word that the Hospital Disaster Plan #1 is in effect. All further treatment supplies will require requisitions to be sent to Central Supply. These cartons do not contain narcotics.

Staffing:

M.S. II	Head Nurse 3 R.N.'s 2 Practical Nurses 3 Nurse's Aides 1 Nurse's Aide sent from another floor 2 Untrained Volunteers	4 Surgical Residents
GYN	Head Nurse 4 R.N.'s 5 Nurse's Aides (3 own staff, 2 from other floors) 2 Ward Aides 1 Social Worker	3 Surgical Residents

M.M.	Head Nurse	1 Surgical Resident
	Assistant Head Nurse	1 Neurosurgical Resident
	3 R.N.'s	
	2 Male Nurse's Aides	
	2 Female Nurse's Aides	
	2 Practice Nursing Students	
	1 Clerk	
W.M.	Head Nurse	1 Surgical Resident
	5 R.N.'s	1 Orthopedic Resident
	1 Practical Nurse	1 Neurosurgeon
	5 Nurse's Aides	
	2 Ward Aides	
	1 Physical Therapist	

Assignment:

You are to consider yourself accounted for in the staffing as stated above on the particular service to which you are now assigned. Lots will be drawn for the particular position you are to have on that staff.

1. "Head Nurses" will be responsible for making out a master plan of assignments. They may choose to use the assistance of classmates with whom they are working.

2. The master assignment plan is then to be used by those designated "Team Leaders" to write specific assignments for their team members.

3. All are to write an action account of what transpired in preparing for, receiving, and caring for casualties from 10:45 A.M. until 6 P.M. Each account is to be within the framework of your assigned role and responsibilities.

CONCLUSIONS

By the time the NLN project came to an end, the Skidmore faculty had arrived at the following conclusions:

1. Preparation for disaster nursing should be a regular consideration in program-planning.

2. The type of preparation developed during the project is sound and is more productive of learning on the part of both faculty members and students than the preparation offered prior to the project.

3. The inclusion of disaster content was not at the expense of other essential areas of study; in fact, this content enhanced the quality of the total program.

4. The effects of disaster nursing instruction can extend beyond the school to the administration and professional personnel of University Hospital. Thus, such instruction might be regarded as one means of lessening the lag between society's needs and its preparation to meet these needs.

5. One member of the faculty should be charged with the responsibility of continuing the development of the disaster nursing component in the Skidmore curriculum. The subject matter invades all clinical areas, so that the involvement of the majority of the faculty is essential. However, when the many pressures on faculty members are taken into consideration, it is only realistic to conclude that disaster preparation needs the special interest and conviction that can be given by a person with assigned responsibility.

DEMONSTRATION IN THE GRADUATE NURSE PROGRAMS OF THE DEPARTMENT OF NURSING EDUCATION, TEACHERS COLLEGE, COLUMBIA UNIVERSITY

GENERAL DESCRIPTION OF THE PROGRAMS

The Department of Nursing Education is one of the seventeen departments that, together with various institutes and special projects, make up Teachers College. Primarily a school for advanced professional education, Teachers College offers programs for teachers and administrators in schools and institutions of higher education and for those working in such areas as guidance and nursing.

The aims of the Department of Nursing Education are to encourage the development of the individual nurse as an effective person, citizen, and professional worker, and to contribute to the system of nursing education, the improvement of health services, and better living in general. Its purpose is to equip its students to render professional service of high caliber in the fields of nursing education and nursing service.

Two types of programs are offered to the graduate nurse: (1) graduate programs of specialization leading to the Master of Arts or Master of Science degree, to the Doctor of Education or Doctor of Philosophy degree, or to a professional diploma, and (2) an undergraduate prespecialization program leading to the degree of Bachelor of Science.

PHILOSOPHY ABOUT DISASTER NURSING PREPARATION

It is the belief of the instructional staff of the Department of Nursing Education, Teachers College, Columbia University, that it must share with others the responsibility for preparing professional nurses to safeguard and improve the health and welfare of people. This responsibility embodies a program designed to help nurses assume personal responsibility for knowing local, state, and national civil defense plans and their designated roles in these plans, and for acquiring the preparation necessary to fulfill their expected professional role. The Department believes that it should disseminate information and contribute to and advance the knowledge required to maintain professional nurses' preparedness for mass disaster.

FACULTY GOALS AND ACTIVITIES

The faculty of Teachers College expressed its belief that it has the duty "through discussion, study, and research, to institute procedures for increasing the efficiency and improving the quality of the instruction, guidance, and professional advancement of students; and by report to the administration, to make proposals for the direction and development of the College for the betterment of the life of the people and the improvement of schools and other means of education, as powerful instruments for the realization in the United States and in the world of the benefits of human welfare, liberty, justice and peace."

As partial fulfillment of this obligation, the staff of the Department of Nursing Education of Teachers College expressed the belief that it should disseminate information and contribute to and advance the knowledge required to maintain professional nurses' preparedness for mass disaster. Therefore, it included in its program of instruction specific learning experiences, based principally on the problem-solving approach, to prepare nurses for extended professional responsibilities in the event of mass disaster.

The instructional staff assumed the following responsibilities:

1. To identify key opportunities for integrating pertinent content relating to civil defense and mass disaster nursing in instructions in each of the programs offered leading to a masters degree and preparing for:
    a. Educational positions in nursing, including educational administration, teaching, and school nursing positions, or
    b. Nursing and nursing service positions, including administrative and supervisory positions in hospitals and public health agencies.
2. To identify key opportunities for the integration of pertinent content relating to civil defense and mass disaster nursing in instruction in the presepcialization program for graduate nurses leading to a baccalaureate degree and preparing for practice in any community health agency.

INVENTORY OF FACULTY AND STUDENT PREPARATION

The Department of Nursing Education at Teachers College prepared an extensive questionnaire that was given to some of the students and faculty members in the department to determine (1) the extent of their preparation for participation in mass disaster and (2) their experience in and reactions to mass disaster situations. The questionnaire was completed by 215 people: 10 members of the department's instructional staff and 28 students working for a doctoral degree, 116 students working for a masters degree, and 61 students working for a baccalaureate degree. These students represented about 45 percent of all full-time and 2 percent of all part-time students of the Department. Students from other countries completed the questionnaires but, because their experiences were considered atypical, their answers were omitted from the analysis of the data.

Data concerning the nursing background of the respondents indicated that:

1. The highest level of education for about a fourth of the respondents was a nursing school diploma, and for about a fifth a masters degree. Thus, the group was not typical of the total registered nurse population. (According to estimates, in 1958, only 1.5 percent of active graduate nurses held a masters degree, and an additional 7 percent held a bachelors degree.[1])

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[1] Eugene Levine. "How Many Nurses Now Have College Degrees?" Nursing Outlook 6:688, December 1958.

2. The majority of the respondents had completed their preservice nursing program in schools located in the north-eastern states.

3. The majority of the respondents had completed their preservice nursing preparation since World War II, and the majority of those with a degree had earned their highest degree since 1950.

4. Respondents had been employed primarily in hospital nursing services and schools of nursing as staff nurses or teachers.

Educational Preparation

Data concerning preparation for functioning in a disaster indicated that:

1. The majority of the respondents had completed a first aid course, but few had completed a Red Cross Home Nursing Instructor's Course or a course in disaster, mass casualty, or civil defense nursing (Table 1).

2. Only 21 of the respondents belonged to the reserve corps of any branch of government service (Table 2), and of this number, only 5 participated in annual training.

3. About a third of the respondents reported that they had had a variety of clinical experiences that helped them to prepare for mass disaster. (See Table 3 for types of experiences.)

4. Of respondents who indicated that they had the various clinical experiences preparing them for mass disaster, about 1 in 5 reported having the experience as part of an inservice program.

5. One in 9 of the respondents reported having taught classes or courses for survival in a disaster situation (Table 4).

6. More than one-fourth of the respondents reported the agencies in which they had been employed included civil defense and disaster nursing in the inservice program; about half of the respondents had either participated in the planning or had been informed of the disaster plan of their employing agency; one-third had had specific assignments, and about one-sixth had had an alternate assignment; and about one-seventh had practiced their mass disaster plan in a dry run (Table 5).

Preparation through Actual Experience

The second purpose of the inventory was to collect information from nurses about their experiences in and reactions to a disaster situation. Seventy-two respondents indicated that they had handled emergencies in the hospital emergency room, outpatient department, operating room, or industrial aid station (including experience in transportation and industrial accidents or daily emergencies) and/or had had experience in natural or man-made disasters or in community epidemics. Only 20 disaster victims of this "experienced" group were able to state their reaction to the disaster (Table 6).

Table 1. Respondents Who Had Completed a Course with Content in Disaster Nursing, by College Status

Type of Course	215 Respondents		10 Faculty Members		205 Students					
					28 Doctoral		116 Masters		61 Bachelors	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
First Aid	161	74.9	8	80.0	24	85.7	85	73.3	44	72.1
Disaster, Mass Casualty, or Civil Defense Nursing	50	23.3	4	40.0	12	42.9	25	21.6	9	14.8
Red Cross Home Nursing Instructor's	28	13.0	5	50.0	5	17.8	15	12.9	3	4.9

Table 2. Respondents Who Were Members of Reserve Corps

	215 Respondents		10 Faculty Members		205 Students	
	Number	Percent	Number	Percent	Number	Percent
Army	8	3.7	1	10.0	7	3.4
Navy	6	2.8	0	0.0	6	2.8
Air Force	3	1.4	0	0.0	3	1.5
USPHS	4	1.8	1	10.0	3	1.5
Total	21	9.7	2	20.0	19	9.2

Table 3. Respondents Who Had Had an Inservice Program or Clinical Experience in Activities Related to Disaster Nursing

Type of Experience	Respondents Who Had Had Experience		Respondents Who Had Had Inservice Preparation	
	Number	Percent	Number	Percent
Delivery of baby	69	32	14	6
Giving of anesthesia under supervision	32	15	6	3
Operating room	78	36	19	9
Emergency room	86	40	19	9
Assisting with debridement	70	33	12	6
Intensive surgical care ward	77	36	19	9
Intensive medical care ward	67	30	17	8

Table 4. Respondents Who Had Taught Classes or Courses Designed to Prepare People for Survival and Disaster Functioning, by College Status

Course and Sponsoring Agency	215 Respondents	10 Faculty Members	205 Students		
			28 Doctoral	116 Masters	61 Bachelors
Courses					
Atomic disaster and civil defense training	9	0	4	5	0
Emergency medical treatment	5	0	2	1	2
First aid	4	0	0	1	3
Home nursing and nurses aide	4	0	2	2	0
Multiple subjects in workshops, etc.	2	0	0	2	0
Total	24	0	8	11	5
Sponsorship					
School or agency	6	0	1	3	2
Civil defense	5	0	3	2	0
Red Cross	5	0	2	1	2
Military	2	0	1	1	0
Professional organization	2	0	1	1	0
Other	4	0	0	3	1

Table 5. Respondents Who Had Had Preparation in Disaster Nursing in an Inservice Program or through Participation in the Disaster Plan of an Institution, by Type of Employing Agency

Type of Preparation	Place of Employment									
	Total N = 215		School of Nursing N = 72		Hospital N = 89		Public Health Agency N = 42		Other N = 12	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Had inservice program	61	28	28	39	25	28	6	14	2	17
Participated in formulation of disaster plan	31	15	7	10	16	18	5	12	2	17
Informed about plan but no actual participation	76	35	30	41	34	38	10	24	2	17
Specific assignments	75	35	27	37	37	41	9	21	2	17
Alternate assignments	37	17	15	21	17	19	5	12	0	0
Disaster drill	32	15	10	14	18	20	4	10	0	0

Table 6. Respondents Reporting Disaster Experience as a Victim and Their First Reactions as a Victim, by College Status

Reaction	215 Respondents	10 Faculty Members	205 Students		
			28 Doctoral	116 Masters	61 Bachelors
Fear	7		1	3	3
Self-preservation	5		1	3	1
Evaluation of situation	4	1		1	2
Desire to help or save other victims	4	1		3	
Total	20	2	2	10	6

1. Of the 72 "experienced" respondents, all had had experience in natural or man-made disasters, 4 out of 5 in emergency situations, and 1 in 8 in handling combat casualties.

2. In the 55 disasters in which the respondents had had experience, the approximate number of casualties ranged from 1 to over 10,000. In 40 of these disasters, there were fewer than 250 casualties. (The American National Red Cross terms a disaster a situation involving 35 victims or the involvement of 5 families.) The respondents reported that the time required for service in these disasters had varied from less than one day to six months or more.

3. Of respondents who reported their duty assignments in disaster situations, about 1 in 4 were assigned (1) to serve in a first aid station, emergency room, or immunization clinic, or (2) to supervise a large ward or shelter, or (3) to serve as a staff nurse in an institution or agency caring for disaster victims.

4. Few of the respondents reported disaster experience as a victim. Those who had had this kind of experience reported reactions of fear and self-preservation, evaluation of the situation, and desire to help or save other victims (Table 6).

The following brief description will give some idea of the diversity and magnitude of the disaster situations in which the respondents had been involved: an oil-tank explosion resulting in 10 severely burned victims, only 4 of whom survived long enough to reach a hospital; the Boston Cocoanut Grove fire, in which there were 100 severely burned victims; various epidemics in which the number of victims ranged from 100 to 2,000; bombing raids in London, in which the terror increased at night because of blackout regulations; floods in Connecticut in the fall of 1955, which wiped out towns in a matter of hours; the Texas City explosion, which resulted in over 500 dead and many wounded; the Cameron, Louisiana, hurricane, which left 550 dead and many injured; the disorganization of an entire student body for five days when 300 students succumbed to Asian flu; and a fire in the pediatric department of a hospital.

IDENTIFICATION OF THE NURSE'S ROLE AND RESPONSIBILITIES IN A DISASTER

Specific Responsibilities

When the pilot project started, there was no available objective evidence of the responsibilities that nurses had actually been called upon or would be expected to assume in mass disaster situations. The likelihood that such information would be forthcoming during the period of the project was remote. Consequently, it was decided to secure at least an indirect estimate of these responsibilities by faculty members and students in the same questionnaire survey from which the foregoing data about previous disaster nursing preparation and disaster experience was elicited.

The 215 respondents to this questionnaire were given a checklist of 52 responsibilities and were asked to indicate their opinions as to whether a registered nurse should be able to assume each of these responsibilities in the event of a mass disaster. These responsibilities, and the percentage of the respondents who believed a nurse should be able to assume them during a disaster, are presented here.

Percent of Respondents Agreeing that the Nursing Profession Should Expect a Registered Professional Nurse to be Able to Carry Out in a Mass Disaster Situation the Responsibilities Listed

Responsibilities Agreed to by:	N = 215
95 Percent or More	Percent Agreement
Improvise equipment and supplies	98.1
Dress wounds	98.1
Understand principles in radioactive contamination of people	97.7
Understand principles in radioactive contamination of water	97.7
Understand principles in radioactive contamination of food	97.7
Know local plan	97.2
Understand principles in radioactive contamination of clothing	96.7
Know with whom you communicate re: personnel, supplies, transportation, facilities	96.7
Know line of command	96.3
Sort (group) casualties for nursing priorities using greatest good for greatest number	95.8
Give on-the-job instruction to nonmedical personnel to care for patients	95.8
Stop hemorrhage, using pressure bandage and pressure points	95.3
Know source of supplies (stockpiled)	95.3
*Perform uncomplicated deliveries	94.9
Establish simplified record system	94.9

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*The instructor in maternal and child nursing took exception to the inclusion of the routine performance of "uncomplicated deliveries" as a responsibility of nurses during a disaster for two reasons: (1) the danger of a mother's becoming infected is greatly increased if the nurse must move from one patient to another when scrubbing facilities are inadequate and sterile gloves and other equipment are in short supply, and (2) the possibility of damaging an infant's head is increased if pressure is applied during delivery by a nurse who is unpracticed in deliveries. The instructor was of the opinion that a safer and more practical method of handling deliveries under disaster conditions would be to teach a mother to deliver herself or to teach a volunteer to help a woman ready to deliver. Accordingly, the faculty recommended that the item be changed to "Assist mother with uncomplicated delivery."

Responsibilities Agreed to by:	N = 215
85 Percent to 94 Percent	**Percent Agreement**
Set up first aid or sorting (group patients for and give priority treatment) station	94.4
Direct preparation of casualties for evacuation	94.0
Splint fractures	93.0
Supervise large groups (20-30) of untrained personnel	92.6
Prescribe treatment for shock	92.6
Know state plan	91.6
Organize and set up immunization station	91.1
Set up, determine priority needs for administration and patient care, and supervise a shelter	91.1
Start intravenous fluids	90.7
Stop hemorrhage with use of a tourniquet	90.2
Evaluate the magnitude of the situation with respect to patient load, available personnel, supplies, facilities, and utilities	90.2
Assist in epidemiological survey	90.2
Direct untrained personnel in obtaining epidemiological data (house-to-house survey for incidence of disease in suspected epidemics)	89.8
Direct evacuation of patients	89.8
Ration supplies	89.8
Inspect health facilities	88.8
Manage large (100-bed) wards under chaotic situation	87.9
Determine how to provide potable water from contaminated supply	86.5
Sort (group) casualties for treatment priorities	86.5
Administer psychiatric first aid	85.1
75 Percent to 84 Percent	
Perform simple debridement of wounds	83.7
Perform mouth-to-mouth resuscitation (from Nursing Management section a)	80.9
Prescribe treatment for burns	80.0
Accept responsibility for fluid therapy (oral and parenteral)	78.6
Perform mouth-to-mouth resuscitation (from Medical Treatment section b)	77.2
Start blood transfusions	76.7
65 Percent to 74 Percent	
Prescribe sedatives	73.0
Treat bacterial warfare casualties	68.4
Treat radiation casualties	68.4
Treat chemical casualties	67.9
Prescribe fluid therapy	67.9
Administer anesthetic under minimum of supervision	66.0

Responsibilities Agreed to by:	N = 215
64 Percent or Less	Percent Agreement
Provide for maintenance of fluid and electrolyte balance	60.0
Initiate antibiotic therapy	59.1
Prescribe morphine	56.7
Prescribe narcotics	56.3
Order blood transfusions	43.3

To summarize the findings from this part of the survey, 75 percent or more of the respondents agreed that in a mass disaster situation, the nurse should be expected to carry out responsibilities that, in general, may be classified as:

1. First aid measures normally within the province of the nurse.
2. Nursing care (physical and psychological).
3. Treatment measures often delegated by the physician to the nurse.
4. Organization and direction of nursing services.
5. Instruction of personnel and volunteers.
6. Management of records, supplies, and facilities.
7. Triage for priority of care, and assistance to mother in uncomplicated delivery.

Less than 75 percent agreed that in a mass disaster situation, the nurse should be expected to carry out responsibilities that, in general, may be classified as medical treatment normally within the province of the physician.

Major Activities

The results of this survey were utilized to develop a list of major activities that was used as a tool for the identification of disaster nursing content. Thirteen categories of major activities were developed:

1. The nurse applies immediate survival tactics to herself. This includes such activities as shielding, individual evasive action, and prevention of severe fatigue.
2. The nurse performs lifesaving procedures, such as resuscitation, hemostasis, and maintenance of fluid and electrolyte balance.
3. The nurse exercises leadership. She directs others in the utilization of available resources so that maximum care is given to the maximum number of people.

4. The nurse applies clinical judgment. She is responsible for sorting and evaluating patients for priority of nursing care. She makes judgments about the substitution of therapeutic materials, the improvisation of equipment and supplies, and decisions for therapeutic action.

5. The nurse applies immediate preventive measures to reduce trauma and disability. She employs measures to delay closure of wounds to prevent infection. She supervises the proper transportation of patients to prevent further injury. She institutes measures that make for maximum conservation of tissue and function.

6. The nurse applies psychological understandings and approaches toward persons exhibiting typical behavior in mass disaster: panic, anxiety, grief reactions, or other physiological and psychological responses to stress or crisis.

7. The nurse establishes and/or operates within the organizational framework of disaster plans. She is aware of the lines of authority and responsibility and the interrelationships of national, state, local, hospital, or agency plans for disaster.

8. The nurse establishes and/or operates within a communications system for relaying treatment orders, supply orders, personnel needs, messages to families of casualties, etc.

9. The nurse initiates and/or cooperates in planning for preparedness before the event of mass disaster and, after the event, for resumption of normal conditions.

10. The nurse assists in sanitation control. She helps prevent the spread of radiation, contamination, and infection to whatever extent possible. She initiates and maintains isolation technique. She helps to maintain potable food and water supplies and adequate waste disposal.

11. The nurse provides instruction in self-care for survival and in "good neighbor" and "buddy" systems of survival care. She determines minimal essential training for functional care of casualties.

12. The nurse provides and/or cooperates in providing for rehabilitative or restorative measures, which are initiated as soon as possible after the emergency phase.

13. The nurse assumes professional and citizenship responsibilities for maintaining preparedness. She assumes personal responsibility for preparing herself to function in a disaster. She evidences concern about the professional and public expectations of the role of the nurse in a disaster. She is aware of the legal aspects of action taken in a disaster situation.

FACULTY PREPARATION

As is usual in any study of curriculum integration, the instructional staff found that they themselves needed to become better informed about the subject matter field to do a good job. Orientation to mass disaster nursing was accomplished primarily through individual study, since few staff members could arrange to attend special intensive training programs.

DISASTER NURSING CONTENT IN EXISTING COURSES

The content of existing courses was analyzed to determine the concepts of mass disaster nursing that were being taught or could be taught in each of three broad areas of instruction and the extent to which mass disaster content was being duplicated.

The organization of related courses into broad instructional areas made it possible to generalize the key opportunities for integrating mass disaster nursing content that might prove useful to comparable programs in other institutions. The three broad areas of instruction were identified as foundational, clinical nursing, and functional. The foundational courses include the biological, physical, and social sciences and the professional courses that provide the base for the social and professional role and functions of the nurse. The clinical nursing courses offer content related to the actual practice of nursing. The functional courses offer preparation for administration, supervision, instruction, or consultation in nursing.

Opportunities for Incorporating Content

Many noncontroversial concepts of mass disaster nursing were readily identified and incorporated into the Department's courses. However, many areas remained where content decisions could not be reached. Agreement would depend on the results of organized research that would define the expected role and extended responsibilities of the nurse in mass disaster, and such investigation was not then a part of the over-all project. The need was deemed urgent for universities to be helped to bring their resources from several disciplines to bear upon research on the nature and extent of disaster nursing functions and to have these responsibilities agreed upon by the several health professions as a basis for moving ahead.

Examples of the specific principles and skills of mass disaster nursing which, it was decided, could be incorporated in existing courses are presented within the three general categories.

I. Foundational Area:

  A. Biological, Physical, and Social Sciences.

    1. Theory required for the following activities:
      a. Application of immediate survival tactics to self.
      b. Performance of lifesaving procedures.
      c. Exercise of clinical judgment.
      d. Application of immediate preventive measures to reduce trauma and disability.
      e. Application of psychological understanding and approaches.
      f. Assistance in control of sanitation.

2. Examples of specific knowledge and skills offered within the programs.
   - a. Maintenance of fluid and electrolyte balance.
     - (1) Principle of fluid flow.
     - (2) Administration of fluids.
   - b. Hemorrhage and blood synthesis.
   - c. Minimal nutritional needs.
   - d. Emergency care of sucking chest wounds.
   - e. Maintenance of airways.
   - f. Handling and transport of patients.
     - (1) Body mechanics of movement.
     - (2) Effects on tissues.
   - g. Emotional and physiological reactions to stress.
     - (1) Anxiety and panic.
     - (2) Grief reactions to loss.
   - h. Nuclear energy and radiations.
     - (1) Basic principles of nuclear energy.
     - (2) Radiation effects on chromosomes, genes, tissues.
     - (3) Theory behind fallout.
     - (4) Shielding; decontamination; dosimetry.

B. Professional Foundations.

1. Theory required for the following activities:
   - a. Exercise of leadership.
   - b. Operation within organizational framework of disaster plans; establishment of disaster plans.
   - c. Cooperation in planning; initiation of planning.
   - d. Assumption of professional and citizenship responsibilities for maintaining preparedness.

2. Examples of specific knowledge and skills offered within the programs.
   - a. Public expectations of the nurse in time of disaster.
   - b. Responsibility of the nurse to maintain and increase competence.
   - c. Assumption of extended functions in disaster.
   - d. Legal aspects of training for medical emergency functions and service in disaster.
   - e. Differences among national groups regarding the role of the nurse; implications for international health problems.

II. Clinical Nursing Area:

A. Theory required for the following activities:

1. Application of immediate survival tactics to self.
2. Performance of lifesaving procedures.
3. Exercise of clinical judgment.
4. Application of immediate preventive measures to reduce trauma and disability.
5. Application of psychological understanding and approaches.
6. Exercise of leadership.
7. Operation within and establishment of a communication system.
8. Operation within organizational framework of disaster plans; establishment of disaster plans.

9. Cooperation in and/or initiation of planning.
10. Provision of instruction.
11. Assistance in control of sanitation.
12. Provision for and/or cooperation in initiating restorative measures.

B. Examples of specific knowledge and skills offered within the programs.

1. Philosophy of disaster nursing.
    a. Principles of sorting.
    b. Observation of large numbers of patients for signs and symptoms vs. consideration of small numbers of patients.
    c. Decisions and actions based on principle of reduction of trauma and disability.

2. Specific clinical skills:
    a. Resuscitation--infant and adult.
    b. Emergency delivery; instruction for self-delivery.
    c. Control of postpartum shock, hemorrhage.
    d. Splinting; simple debridement.

3. Improvisation of equipment and supplies.

4. Leadership role in crises: extension of functions to meet disaster needs.

5. Utilization of available people and resources to give safe care to maximum number of casualties.

III. Functional Area:

A. Administration and Supervision.

1. Theory required for the following activities:
    a. Exercise of leadership.
    b. Establishment of disaster plans; operation within organizational framework of disaster plans.
    c. Establishment of and/or operation within a communications system.
    d. Initiation of and/or cooperation in planning.
    e. Exercise of clinical judgment.
    f. Application of immediate preventive measures to reduce trauma and disability.
    g. Application of psychological understanding and approaches.

2. Examples of specific knowledge and skills offered within the programs.
    a. Leadership in crises: extension of responsibilities.
    b. Assessment of needs to accommodate many times the normal number of patients.
        (1) Staffing.
        (2) Supplies.
        (3) Facilities.

- c. Consideration of type of disaster in formulation of disaster plan.
  - (1) Awareness of typical injuries.
  - (2) Understanding of nursing skills required and possible need for additional training of professional personnel.
- d. Formulation of disaster plans for hospital, agency, community, state and nation. Attention to such aspects as:
  - (1) Organization.
  - (2) Command.
  - (3) Handling of records.
  - (4) Transportation.
- e. Evaluation of care based on standards designed to serve maximum number of people.

B. Consultation and Teaching.

1. Theory required for the following activities:
   - a. Exercise of leadership.
   - b. Establishment of disaster plans; operation within organizational framework of disaster plans.
   - c. Establishment of and/or operation within a communications system.
   - d. Initiation of and/or cooperation in planning.
   - e. Provision of instruction.
   - f. Exercise of clinical judgment.
   - g. Application of psychological understanding and approaches.

2. Examples of specific knowledge and skills offered within the programs.
   - a. Leadership in crises.
     - (1) Training for leadership.
     - (2) Predicting qualities of leadership.
   - b. Concept of sudden change vs. planned change.
   - c. Use of the nurse as a consultant in crisis situations.
   - d. Instruction in disaster--with reference to:
     - (1) Minimal skills for care.
     - (2) Attitudes for giving service to the maximum number.
     - (3) "Good neighbor" and "buddy" systems of care.

Duplication of Content

At the outset, it was recognized that there would be duplication of content. For example, one important concept that was found to pervade many areas of the Department's programs was that of leadership in crisis. In some instances, the topics of leadership and crisis were discussed separately, then merged for application to mass disaster. In others, the subjects were handled differently. The concepts of (1) crisis and the behavior of individuals or groups in crisis, (2) leadership, and (3) planned versus sudden change were usually taught in courses in mental health and psychiatric nursing and consultation.

The search for duplication of content revealed other similarities in content accompanied by differences in approach. For example, some aspect of nuclear medicine was discussed in physics, chemistry, and cancer nursing. In chemistry, the focus was on the theoretical aspects of the problem--the structure of the atom and the nature of radiation and its effect on tissue. In physics, the theory underlying protection by shielding and aspects of decontamination and dosimetry were discussed. In cancer nursing, the therapeutic use of radioactive isotopes and the pathology and treatment of malignancies resulting from radiation were considered.

Similarly, the transporting of disaster victims, when discussed in physics, focused on principles of levers and body mechanics; in anatomy and physiology, on the traumatic effect of improper movement and handling on tissue; and in cardiac nursing, on the determination of modes of transportation when movement of patients must be held to a minimum.

Methods of Incorporating Content

The ways in which mass disaster nursing content was incorporated were varied. Within the graduate programs, for example, seminars proved particularly effective for integrating content in mass disaster nursing. As advisers became involved in the work of the pilot study, they began to use in their major seminars illustrative material drawn from mass disaster situations and to assign disaster nursing topics for class projects. Increasingly thereafter, students began to express interest in the subject and to select mass disaster settings for group projects. Thus, seminar study and group projects emerged as key opportunities for facilitating integration of mass disaster content through student concern.

For example, a group preparing for positions as administrators of nursing services decided to develop a nursing service disaster plan for a hypothetical hospital. Another group of students preparing for positions as school nurses recognized the responsibility of the school nurse to introduce the concept of mass disaster preparedness into the school program. The report of this class project included a program for education of parents through Parent-Teacher Association programs. Two members of the group who were returning to positions with a state health department planned to initiate action to have the need for mass disaster preparedness discussed at the school nurses' conference prior to the beginning of the school year.

The program preparing administrators of inservice programs was particularly receptive to integration of disaster nursing materials. Students working on a class project in this area discovered that orientation to a hospital disaster plan is a good way to introduce mass disaster content into an inservice education program, but that preparation of personnel of all departments to function in mass disaster requires coordination in delineating and assigning responsibilities. They found that the disaster program might well serve as a vehicle for introducing to a hospital the concept of coordinated inservice education programs, a goal advanced by many nursing inservice specialists.

Students preparing for positions in administration of psychiatric nursing services expressed interest in the implications of mass disaster for their work. A group proposed the psychiatric hospital as a likely storage place for one of the federal Civil Defense Emergency Hospitals. In their attempts to explore current thinking on the use of the psychiatric hospital in mass disaster planning, they found little information in the literature. However, they were assisted by their instructor and the project director (as a resource person) and were provided with materials by the American Psychiatric Association, the Office of Civil and Defense Mobilization, the State Department of Health, and a local psychiatric hospital. Their findings were then used to develop a teaching unit of a psychiatric nursing course.

Thus, it was found that considerable integration of mass disaster nursing content was possible in the existing courses. It was recognized that duplication of mass disaster materials is of value in providing different and significant approaches to specific problems.

THE COURSE IN DISASTER NURSING

The Prespecialization Committee recommended that a course on mass disaster nursing be introduced and offered as an elective primarily for students in the baccalaureate degree program, but also for graduate students. The project director assumed responsibility for developing the course and teaching it while she was assigned to the study.

The course was entitled "Nursing in Mass Disaster." It was a 2-point course, offered for one 2-hour period a week throughout a semester and described in the College bulletin as follows:

> Role of the professional nurse in natural and enemy-caused disaster; priority nursing for life-saving and health maintenance; nursing functions and responsibilities in relation to disaster situations of various types and magnitudes.

Purpose and Objectives

The purpose of the course was to provide learning experiences that would help the graduate nurse to understand her role in disaster situations:

1. In relation to other people.
2. In relation to a variety of agencies that provide disaster assistance.
3. Before, during, and after the actual event.

Objectives of the course were:

1. To understand the philosophy of patient care necessary to adopt in mass disaster situations.
2. To understand the problems mass disaster creates, with emphasis on the numerous highly complex medical problems.
3. To understand the disaster functions and organization of selected federal, state, and local agencies.
4. To appreciate the role nursing, medical, and paramedical personnel will assume in mass disaster situations.
5. To increase understanding of selected current methods of emergency medical treatment, with emphasis on their application in mass disaster situations.

6. To understand measures for individual survival necessary to apply in the event of nuclear disaster.

7. To increase awareness of the resources available to teach civil defense.

Content and Teaching Methods

The course content was based on Nursing During Disaster: A Guide for Instructors, published by the NLN in 1957. Approximately one-half of the course was devoted to developing an understanding of the total disaster situation in both natural and man-made disasters, an understanding of what every citizen should know about survival in the event of a nuclear disaster, and the role of various agencies related to disaster planning and relief. The remainder of the course was centered on casualty care and the nursing responsibilities in the various kinds of medical installations.

A variety of teaching methods were used. These included:

1. Lecture - Discussions
   a. By course instructor.
   b. By selected resource people including:
      (1) Representatives from the American Red Cross.
      (2) Radiological health consultant.
      (3) Representatives from the Office of Civil and Defense Mobilization.
      (4) Hospital consultant on disaster nursing.
      (5) Research associate interested in the physiologic aspects of shock.
      (6) Nurse consultant from the New York State Office of Medical Defense.
      (7) Representative of the New York Telephone Company.

2. Panels of students
   a. To present an analysis of a particular disaster, the problems created, and the possible nursing action taken.
   b. To present material related to survival measures every citizen should know.
   c. To present emergency treatment and techniques for caring for a particular type of casualty.

3. Demonstrations
   a. The decontamination of food.
   b. Forms of artificial respiration.
   c. Rescue techniques.
   d. Hospital planning for expanded use of facilities.
   e. Selected equipment from the Improvised Emergency Hospital.

4. Field Trips
   a. American Red Cross
   b. Office of Civil and Defense Mobilization, Eastern Instructor Training Center
   c. First Army, Governor's Island.

Teaching aids included films, a bibliography, and transparencies taken by the instructor at various courses and Civil Defense exercises.

The content and ways in which the course was taught were as follows:

Content	Method
1. Effect of disasters of various types and magnitudes upon man and his environment.	Review of disasters and the theory of disaster and the effects upon the economic and sociocultural system.
a. Natural disasters of world magnitude: 79 A.D. Pompeii; 1348-1350 Black Death; 1918 influenza epidemic.	Identification by students, from report or research study, of the emergency medical care and health needs.
b. Natural and man-made mass disasters of the United States: hurricanes, fires, floods, tornadoes, epidemics, transportation, accidents, explosions.	
c. Potentials for enemy-caused disaster: the United States as a world power; enemy capabilities; United States offensive and defensive protection.	Résumé of historical geopolitical facts encompassing world problems and related current issues.
d. War disasters: Conventional warfare; bombings	Discussion.
Modern warfare: nuclear, chemical, bacteriological warfare.	Films and slides; selected reading.
2. The philosophy of "the greatest good for the greatest number" in a nuclear warfare disaster.	Films and discussion
3. Basic principles for conservation of life in mass disaster.	Evaluation by students of principles of disaster and mass casualty care, environmental problems.
a. Teaching of survival care to every individual (self-preservation and first aid).	

Content	Method
b. Sorting of casualties.	
(1) Prompt return to work of patients with minor injuries.	
(2) Establishment of system of treatment priorities for lifesaving and health maintenance.	
c. Economical use of medical assets.	Comparison with present team concept.
(1) Trained medical personnel will function only in medical facilities.	
(2) Rigorous conservation of medical facilities and supplies.	
d. Preplanning and training for emergency medical care of mass casualties.	Establishment of hypothetical organization and mass disaster situation.
(1) Use of the principles of sorting of the sick and wounded.	
(2) Treatment of overwhelming casualty load will require application of principle that professional personnel will work only in medical facilities.	Problem solving.
(3) Need to utilize untrained personnel, including those with minor injuries.	Discussion; films.

Content	Method
(4) Principles of self-preservation in nuclear disaster.	
(5) Principles of survival care ("self-help" and "neighbor care" and "buddy system") and first aid.	Review of research reports; demonstration.
(6) Improvisations	Problem identification and solving.
4. Recognition of the citizenship and professional obligation of the nurse in mass disaster.	Discussion.
a. Code of ethics; nursing functions; responsibilities of the professional nurse; assumptions of ANA and NLN as to the nurse's functions in a disaster.	
b. Volunteers' services in natural disasters; role of nurse volunteer with Red Cross.	
c. Military nursing.	
5. Civil Defense organization, control, and plan of operations in national emergency or major natural disaster.	
National, state, and local plan and means of coordination:	
a. Functions of Civil Defense.	Discussion.
b. Civil Defense stockpiled supplies.	Discussion.
(1) Components of stockpile.	

Content	Method
(2) Procedure for allocation.	
(3) Sources of supply.	
(4) Records to be maintained.	
c. Responsibilities of U.S. Public Health Service.	Discussion.
d. Relationship between Civil Defense and Red Cross.	Charts
e. The place of the nurse within the organization and administrative framework of civil defense.	Discussion.
f. Training program.	Participation in Civil Defense Emergency Hospital Training Exercise or a solution of disaster situation requiring knowledge of organization, command, casualty flow, communications, supplies, equipment, and records.
6. The American Red Cross: organization, functions, and operation of the national, regional, and local chapters.	
a. The place of the nurse in the organizational framework.	
b. Training functions.	
7. The purpose of a hospital or an agency disaster plan and the principles used in formulation of the plan.	Discussion of the basis for requirement by the American Hospital Association of disaster plan for hospital accreditation. Discussion of principles of disaster planning.
a. Assignments for all personnel.	Review of a disaster plan for an institution.
b. Coordination with community disaster plan.	Evaluation of the plan for local community or health agency in relation to principles of organization for disaster, flexibility for varying situations.

Content	Method
	Formulation of a nursing service annex for a disaster plan for a hypothetical hospital.
8. Supporting services in disaster.	
a. Public health, public works, welfare, police, fire, radiological monitoring, transportation, communications, clergy, mortuary services, warden.	
b. Professional organizations.	
9. The official statements of the ANA, NLN, and AMA in relation to role of the nurse in mass disaster.	Review of statements of the professional organizations in official publications to determine the professional obligation to the public for nursing functions in disaster.
10. The organization and administrative framework of services organized for disaster.	
11. Local plans for making a survey in event of disaster which would determine: what has happened; extent of the disaster; number and kind of injuries; groups of people involved; population area involved; surviving facilities and usefulness; evacuation of non-casualty population and hospital patients; how to alert hospitals and other agencies.	Problem solving.
a. Relationship of nursing service administration to administration of other services.	
b. Responsibility of nursing administration to determine that personnel are prepared, know warning, and know assignment for disaster.	

Content	Method
12. The expected role of the nurse in disasters of various types and magnitudes.	Critical review of literature and research reports.
a. Emotional reactions in disasters: normal reactions, disaster reactions.	
b. Leadership qualities that will be required of the nurse in disaster.	
(1) Recognition of fact that nurse is expected to be a leader.	
(2) Recognition of ability of untrained personnel to give assistance in patient care.	
(3) Ability to use those with minor injuries.	
(4) Acceptance of possibility that the nurse may have to relinquish some nursing duties.	
(5) Acceptance of possibility that the nurse will assume some medical responsibilities.	
c. Responsibilities of the nurse in disaster.	Discussion of survival care (lifesaving) responsibilities of the nurse.
Duties not normally required of all nurses.	

Content	Method
(1) Supervision of large numbers of all types of seriously injured requiring care.	
(2) Carrying out of standing orders with little or no supervision.	
(3) Evaluation of patients' conditions and establishment of priority of treatment.	
(4) Teaching of large numbers of volunteers to care for seriously injured.	
13. Functions and responsibilities of the nurse in a nuclear disaster.	
14. Minimum essentials of nursing care for lifesaving and health maintenance.	Problem solving; demonstrations; discussion.
a. Observation of signs and symptoms.	
b. Immediate initiation of lifesaving measures.	
c. Administration of medications and treatment.	
d. Maintenance of fluid and electrolyte balance.	
e. Positioning or turning of patient to maintain normal body functions.	
f. Feeding.	

Content	Method
g. Taking care of bowel and bladder needs.	
h. Maintenance of records.	
i. Maintenance of environmental sanitation.	
j. Maintenance of oral hygiene.	
15. Effect and control of epidemics in mass disaster.	Identification of principles by which an epidemic can be prevented or controlled.
a. Symptoms of communicable diseases (including those usually under control under normal conditions, such as typhoid, smallpox, diphtheria).	Review of disasters in which the control of disease was a problem and determination of cause and preventive measures.
b. Occurrence of tetanus in disaster.	
c. Preventive measures to control communicable diseases, including those normally under control.	
16. Principles of radiation and of decontamination.	Presentation by an authority on radiation.
a. Radioactive fallout effects.	
b. Dispersion and effect of radioactive strontium and radioactive cobalt.	
c. Radiation syndrome in man. Physical, chemical and biological changes which occur as result of radiation and which produce disease complexes related to bone marrow, epithelial tissue.	

Content	Method
17. Medical sorting and its application to nursing.	Lecture and discussion.
a. Minimal treatment (return to duty).	
b. Immediate (expedient procedures to save life and limb).	
c. Delayed (incurring little risk).	
d. Expectant (for critically injured).	
18. Adaptation needed in administrative responsibility and control.	
a. Standing orders.	
b. Schedules during disaster.	
c. Recognition of responsibility to serve rather than follow personal desires.	
d. Recognition of priority action.	
e. Understanding of effect on nursing personnel of unreasonable demands of others who "fail to cooperate."	
f. Understanding of the administrator's responsibility for use of records and information about personnel and victims.	Critical examination of disaster admission and treatment records.
(1) Brief recording of essential information as to treatment, time given, reactions if any.	Practice exercise using Civil Defense emergency medical tags.

Content	Method
(2) Policies for identification of personnel and patients.	
(3) Importance of registration information about and identification of newborns.	
g. Understanding of basic underlying principles and the skills required for emergency treatment and care of the injured in a nuclear disaster.	Lecture and discussion; problem solving. Group to select one major type of injuries expected in a disaster and determine the immediage emergency care and treatment required for lifesaving.
(1) Thermal burns.	
(2) Fractures.	
(3) Emergency delivery.	
(4) Resuscitation and shock.	
(5) Psychological casualties.	
(6) Public health measures.	
(7) Chemical, biological, and radiological casualties.	
(8) Decontamination from radiation.	Teacher demonstration using foodstuffs. Laboratory period in which students decontaminate foodstuffs using different types such as canned goods, paper containers, plastic covers, and fruits (bananas) and verify effectiveness using monitoring instrument.
h. Requirements for improvisations.	Identification and demonstration of improvisations that could be made in equipment or supplies.
i. Review and proficiency testing.	Emergency Hospital Training Exercise or field trip to observe Field Hospital in operation.

Evaluation of Students

Students were evaluated on the basis of their performance with respect to:

1. Individual evaluation of local health agency or community disaster plan.
2. Group report on the Improvised Emergency Hospital.
3. Individual papers related to care of various types of casualties.
4. Group reports related to individual survival measures.
5. Final examination.

Evaluation of the Course

The students in each semester were asked to submit a written evaluation of the course. Certain generalizations could be made from their comments.

1. The course objectives were met satisfactorily.
2. Greater emphasis should have been placed on the leadership role of the nurse in a disaster.
3. More emphasis was needed on how to teach disaster concepts to community groups.
4. It would be desirable to include more field trips and training exercises.
5. Optional film showings were helpful.
6. The guest speakers were utilized effectively.

THE EMERGENCY HOSPITAL TRAINING EXERCISE

The project director and other personnel from Teachers College cooperated with personnel from the New York State Department of Health, Office of Medical Defense, and from Skidmore College in planning a training exercise and demonstration of the Civil Defense Improvised Emergency Hospital. College students and health personnel from the community participated in the experience. The training exercise is described in detail in the report of the Skidmore College project.

RECOMMENDATIONS TO THE DEPARTMENT OF NURSING EDUCATION, TEACHERS COLLEGE

Curriculum building is a continuous process and can at no time be considered a completed task. The report of the process through which one faculty approached a curriculum study is therefore incomplete, since it reflects only a phase of the work accomplished toward fulfillment of that study's aims. The recommendations that follow were made by the several faculty committees and by the faculty as a whole, functioning as the Department's curriculum committee. They reflect the plan developed for the pilot project at Teachers College. Most of the recommendations were made at the end of the first year of the study; some were reiterated at the end of the second year. Many have been fulfilled; others have been undertaken but not yet fully realized.

It was recommended to the Department of Nursing Education, Teachers College:

1. That a course, "Nursing in Mass Disaster," be introduced in the curriculum and an instructor appointed in 1959-60 to provide learning experiences that had not been included in current required courses in the following areas of knowledge:

   a. Current materials on first aid.

   b. Survival measures.

   c. Principles of sorting.

   d. Treatment of major injuries.

   e. Extension of nursing responsibilities.

2. That the course "Nursing in Mass Disaster" be offered as a part of the nursing major in the baccalaureate program on a selective basis.

3. That the course "Nursing in Mass Disaster" be open to students in all masters programs and be recommended by advisers to students who have not had basic instruction in this subject.

4. That in addition to the course "Nursing in Mass Disaster" and disaster content already included in the courses of the Department, mass disaster learning experiences identified in the future be incorporated in courses when in the judgment of the instructors they are relevant and contribute to course objectives.

5. That the nursing education staff and students sponsor a one-day institute annually to present new and practical aspects of preparedness for mass disaster.

6. That provision be made for members of the nursing education staff to attend courses or participate in inservice programs or obtain other experiences in the area of civil defense and mass disaster; and that adjustments be made in the work load of the staff to provide sufficient time for these experiences.

7. That a member with professorial status be appointed to the nursing education staff to give leadership in mass disaster nursing instruction and other related activities as the major responsibility of her assignment.

8. That the disaster plans for the Teachers College community and adjacent hospitals be determined for the purpose of studying ways in which these can be used for applied learning experiences for nursing education students.

9. That the role of the Department be determined in the Teachers College plan for operations in the event of disaster.

10. That the Department of Nursing Education with other departments of the College, such as Sociology, Psychology, and Philosophy, explore possibilities for developing mass disaster content for all students of the College.

11. That efforts be made to determine effective psychological preparation for mass disaster for all personnel at Teachers College.

DEMONSTRATION IN THE PRACTICAL NURSING PROGRAM OF THE UNIVERSITY OF MINNESOTA SCHOOL OF NURSING

GENERAL DESCRIPTION OF THE TOTAL PROGRAM

The School of Nursing of the University of Minnesota is one of the schools of the College of Medical Sciences. The faculty describes its educational philosophy as "a democratic philosophy of education with its concept of the social role of education in a democratic society, its emphasis upon the inherent worth of the individual and the dignity and value of human life, and its acceptance of the task of building free citizens who strive not only for their own rights and liberties but for those of others who assume the responsibility and obligations of free citizenship."

The School of Nursing conducts four types of programs in nursing: a program in practical nursing, a program that leads to a baccalaureate degree for students with no previous preparation in nursing, programs that lead to a baccalaureate degree for graduate nurses, and programs that lead to a masters degree. The first two of these programs--the practical nursing program and the baccalaureate basic program--participated in the project. The instructors in these two programs planned and worked together during the study.

The practical nursing program is designed to prepare practical nurses to give nursing service under the supervision and guidance of professional nurses or physicians.

The four-quarter program is offered on the Minneapolis campus of the University. Students are enrolled for from 12 to 16 credit-hours per quarter, approximately one-third of which are in general education courses. The practical nursing courses include supervised clinical experience in the care of mothers, babies, children, and medical and surgical patients. Additional experience in the care of the aged and chronically ill is gained in convalescent homes and homes for the aged. About 20 hours per week during the winter, spring, and summer terms are devoted to these experiences with patients.

The courses included in the program at the time of the NLN project were as follows:

GC 2A--Psychology in Modern Society (5)

(or) GC 1A--Individual Orientation (4)

GC 10B-C--Human Biology (6)

GC 3A--Marriage and Family Living (5)

(or) GC 40--Problems in Contemporary Society (5)

(or) GC 37--Social Trends and Problems (5)

(or) Other social studies electives with permission of School of Nursing adviser

GC 32--Oral Communications (3)

PN 1--Introduction in Practical Nursing (5)

PN 2-3-5--Elements of Nursing Care (24) (w, s, su sequence)

PN 6--Home Care of Patients (2)

PN 7--Personal and Vocational Relationships (2)

PN 10--Care of Mothers and Infants (3)

PN 11--Child Care (3)

PN 14--Normal Diet and Its Modifications (2)

PHILOSOPHY OF DISASTER NURSING

The University of Minnesota faculty in nursing accepted the statement of belief that was prepared at the beginning of the study by the project directors and key faculty members of all the participating institutions as the framework for content identification and curriculum analysis.

> The role of the professional nurse in natural or enemy-caused disaster is to adapt nursing care with respect to lifesaving and health maintenance to situations where the number of people needing care and treatment greatly exceeds the number of prepared people available, and where supplies, equipment, physical facilities, and utilities are limited.

FACULTY GOALS AND ACTIVITIES

The faculty members of the professional and practical nursing programs planned and worked together in the study. They agreed to identify the understandings, knowledges, and skills in disaster nursing that graduates of basic professional nursing and practical nursing programs should possess; to ascertain the principles and practice essential to the effective functioning of such graduates in their probable disaster roles; and to study ways in which the learning of those essentials can be incorporated into the programs at the University of Minnesota School of Nursing with a maximum economy of curriculum time and teaching personnel.

The faculty identified its activities as follows:

1. To orient participating personnel to the project.

2. To orient participating personnel to the scope and problems of disaster nursing.

3. To identify disaster nursing principles pertinent to the educational programs being studied.

4. To identify current curriculum content that directly or indirectly contributes to the student's preparedness for functioning in a disaster setting.

5. To study ways in which disaster principles can be incorporated into the basic professional and practical nursing curriculums.

6. To make recommendations for disaster nursing content in the basic collegiate and practical nursing curriculums.

7. To develop a philosophy of disaster nursing as a guide for study and evaluation of the curriculums, and as a basis for recommendations growing out of the study.

IDENTIFICATION OF CONTENT AND OBJECTIVES

Questionnaire

As a start toward identifying what disaster nursing content should and could be taught in the practical nursing program, the nurse faculty members in this program answered the same 20 questions that had been responded to by the faculty members teaching in the baccalaureate degree program in nursing.

1. What would be the nature of disasters that relate to your specialty area?

2. What are the types of uninjured victims whose care would come under the scope of your area?

3. What are the types of injured victims?

4. What are the aspects of lifesaving measures and emergency care that belong in your specialty area?

5. Are there opportunities for including principles of sorting and treatment priority in teaching care of disaster casualties?

6. What specific nursing procedures relate to the care of disaster victims?

7. Is the student introduced to the criteria for essential nursing that would be used in a disaster situation?

8. What improvisation of supplies and equipment is included in teaching patient care in this area?

9. Is the nurse prepared to carry out disaster treatment within this area with little or no medical supervision?

10. Are there approved standing orders that may be used in disaster care for patients in your specialty area?

11. Is there an opportunity for developing an understanding of problems related to administering disaster nursing services?

12. Are there opportunities for teaching families, lay persons, and auxiliary personnel to carry out procedures and give nursing care with little or no supervision?

13. What preventive or protective measures might be included in your area relative to patient safety in a disaster situation?

14. Do the students' experiences in your clinical area contribute to their emotional preparedness to work in a disaster situation?

15. What psychological problems of disaster victims come within your specialty area?

16. What contribution does your specialty area make to the student's understanding of the public health aspects of disaster situations?

17. What are the problems of shelter living that relate to your area?

18. What contacts with other agencies, organizations, etc., does your course afford that could be utilized for emphasis on disaster preparedness and planning?

19. Are there opportunities for student projects relating to disaster nursing?

20. What bibliographical references in disaster nursing are made available to your students?

Further Considerations

In addition to the data collected from this questionnaire, the faculty members decided that certain factors relating to the practical nursing program and its students would have a bearing on the disaster nursing objectives and content of the program. These factors were:

1. The type of student enrolled in the practical nursing program, i.e., the age range of from 17 to 50+ years.

2. The previous education of the student, including her awareness of her role as a citizen in the event of a disaster.

3. The educational limitations imposed by the fact that the program is four quarters in length.

4. The kinds of educational experiences needed to enable a graduate of a practical nursing program to function effectively as a licensed practical nurse.

5. The many different types of responsibilities that the graduate of the program may assume.

Assumptions

Study of these factors led to the formulation of the following assumptions:

1. The American citizen has limited knowledge about his role in the event of a civil or enemy-caused disaster.
2. The students in practical nursing have opportunity to complete the American Red Cross First Aid Course prior to admission to the program.
3. The licensed practical nurse will probably have the same basic responsibilities in a mass casualty situation that she has in non-disaster or peacetime nursing settings; that is, there should be no expansion of types of function or delegation of nursing responsibilities beyond those which she is already prepared to assume. However, greater self-direction may be required in areas in which she has already proved her competence. This is to say that the practical nurse will continue to function under the supervision of the professional nurse or a physician in a disaster situation just as she does in non-disaster situations.
4. Discussion of the responsibilities of the practical nurse in the event of disaster was already included in some practical nursing courses in the University of Minnesota program.
5. In many classes information applicable to disaster nursing was included but not emphasized.

Preliminary and Continuing Preparation

A study of these assumptions helped the faculty members to solve what at first had seemed like a dilemma--the disparity between the abilities that a practical nurse should have in order to assume her appropriate role in a disaster and the relative shortness of the practical nursing curriculum.

First, it was recognized that some of the abilities that the practical nurse would need were abilities that every citizen should have and could acquire elsewhere than in a nursing program. Specifically, the attainment of first aid knowledge and skills was recognized as a responsibility of every citizen. Accordingly, it was decided that the completion of a Red Cross First Aid Course should constitute a prerequisite to admission to the practical nursing program, or, in the case of students who might not have completed the course at the time of admission, should be taken during the first half of the program.

Second, it was agreed that the students should be made aware of the desirability of their continuing to prepare for disaster nursing responsibilities after graduation by taking advantage of any inservice education programs, workshops, or institutes on this subject that might be available to them.

Objectives

These decisions about prerequisite and continuing preparation enabled the faculty to formulate objectives relating to disaster nursing preparation that it considered attainable in the practical nursing program of the University of Minnesota. These objectives were to help the student to:

1. Acquire background information pertaining to different types of disasters and the possible destruction of property and lives in these disasters.
2. Understand the functions of various agencies that are involved in planning for nursing preparedness.
3. Gain knowledge of her citizenship responsibility in disaster preparedness.
4. Assist her family in preparing means to cope with disaster.
5. Develop an understanding of her possible individual role as a licensed practical nurse in caring for the injured survivors of a disaster.
6. Gain an awareness of her possible role as a member of the health team in giving immediate and continuing care to injured victims of a disaster.
7. Improve her ability to modify and adapt equipment and nursing methods to unusual situations.

PLACEMENT OF DISASTER NURSING CONTENT

As the faculty analyzed the objectives relating to disaster nursing and broke them down into component subobjectives, it became obvious that some of the subobjectives were closely related to objectives of the existing practical nursing courses. It was therefore decided that the content of these courses could be presented in such a way as to emphasize the applicability of the learning to disaster nursing situations.

On the other hand, some of the content required for attaining disaster nursing objectives did not lend itself to interpolation in existing courses. This content, it was decided, could best be taught in a series of classes, placed toward the end of the program, that was termed the "disaster nursing block." The reasons for this decision were as follows:

1. Early in her program the student must adjust to the responsibility of learning to care for patients in a clinical setting. Procedures demonstrated in the classroom and carried out in the clinical area are new to the student, and she often finds it difficult to transfer her classroom preparation to actual patient care. To add an additional dimension of nursing, that of disaster nursing, during this period of adjustment would jeopardize the current educational program.
2. The time factor is an ever-present limitation. Aiding the student to learn basic nursing skills within a fairly stable environment seems to consume most of the time allotted to formal instruction. To effectively interject a factor that deviates from what is usually seen in

the clinical situation would therefore require more time than is presently available within the established number of class hours.

3. A sound preparation in basic nursing care would serve as a logical basis on which to build a series of classes on the practical nurse's responsibilities in the event of a disaster.

INTEGRATION OF CONTENT

Certain clinical laboratories were identified as those in which a concerted effort could be made to emphasize the applicability of the knowledge and skills being learned to a disaster situation.

Content Area	Clinical Laboratory
Care of premature infant in an unusual situation	Pediatrics
Effect on children of family separation	Pediatrics
Care of patients with burns	Pediatrics, Surgery
Emergency deliveries	Obstetrics
Recognition of stages of pregnancy	Obstetrics
Recognition of abnormalities of pregnancy	Obstetrics
Care of patients with fractures	Orthopedics
Care of radiation exposure victims	Medicine, Surgery
Care of patients with respiratory problems	Medicine, Surgery
Care of patients with seizures	Neurology
Care of patients with large wounds	Surgery
Care of patients in shock	Surgery

THE DISASTER NURSING BLOCK

The disaster nursing block, which was placed in the last ten weeks of the program, served two purposes: a review of disaster nursing content that had been "sprinkled" in other courses, and a concentration on the total problem of disaster preparedness.

The block included ten class periods of about two hours each; student-teacher conferences; and student group projects, which involved the collection and class presentation of information on a disaster nursing subject. Of the ten classes, four were placed in the first two weeks of the ten-week period (two per week), and six were scheduled during the last three weeks (also two per week). The time lapse between these two series of classes made it possible for the groups of students to have at least two planned conferences with the instructor. Formal class sessions during this interval were utilized for other courses. Student projects were assigned during the first two weeks, so that the students could work on them when they were not scheduled for classroom instruction or clinical experience.

Pretest

The determination of the specific content that should be included in the disaster nursing block rested, in part, on the answers to several questions: To what extent have the students retained their knowledge of first aid principles? Are they able to apply these principles to problems that might arise in a disaster? How effective is the emphasis on "disaster nursing applications" in the practical nursing courses? What content needs to be expanded in the disaster nursing block?

As an aid in answering these questions, a test, formulated from questions by the instructors in the practical nursing courses, was given to the students before they began the disaster nursing block. Portions of this test are presented here to show the type and level of content included.

Part I: Check all of the correct responses to the following questions.

Normal body cells which are most readily affected by radiation therapy include:
1. White blood cells
2. Red blood cells
3. Mucous membranes
4. Bone
5. Skin
6. Hair follicles

Common side effects of radiation therapy include:
7. Decreased hemoglobin
8. Decreased number of white blood cells
9. Edema
10. Constipation
11. Diarrhea
12. Nausea

Appropriate measures for the relief of the side effects of radiation therapy include:
13. Citrus fruit juice
14. Tea
15. Mouthwash - ½ strength
16. Olive oil to the skin
17. Kaopectate
18. Compazine

Protective isolation may be used when:
19. A patient has rheumatic fever
20. A patient has third degree burns
21. A patient has a staphylococcus infection
22. A patient has a decrease in the number of white blood cells

Symptoms of shock include:

23. Deep snoring breathing
24. Rapid shallow respirations
25. Rapid pulse
26. Slow pulse
27. Warm dry skin
28. Moist clammy skin

Symptoms of shock may be relieved by:

29. Semi-Fowler's position
30. Application of warm water bottle to feet
31. Giving warm fluids orally if person is conscious
32. Taking the person's vital signs frequently
33. Giving medication to relieve the pain caused by an injury

Symptoms of increased intracranial pressure may include:

34. Eye pupils unequal in size
35. Slow pulse
36. Weak pulse
37. State of unconsciousness

If a person has a simple fracture of his forearm:

38. He will have pain at the site of the fracture
39. There may be swelling of the broken arm
40. He should be placed in a comfortable lying position
41. He will not be able to move his fingers

Traction applied to a broken limb means that:

42. You provide a firm, strong, gentle pull on the limb
43. You may stop pulling when the person's pain is relieved
44. You may stop pulling when splints are in place
45. You will have to have another person apply the splints if you are applying the traction

You are giving first aid to victims of an automobile accident; one of the victims points at his legs and says, "I can't move them." You would:

46. Suspect he might have a broken neck
47. Roll him on his abdomen to check his back
48. Not move him without help unless absolutely necessary
49. Check for any other apparent injuries

Part II: Place a plus sign (+) before each true statement and a 0 before each false statement. Change the underlined word or words in each false statement to make it true.

1. A third degree burn is characterized by a reddening of the skin with no destruction of tissue.

2. First aid for burns includes covering the burn with a bland ointment.

3. If a person faints he should be placed in a position in which his head is lower than the rest of his body.

4. "Noisy" respirations should be considered as an indication of a partially obstructed airway.

5. One of the greatest concerns in planning for the medical therapy of a severely burned patient is the prevention and control of edema.

6. Every injured person, regardless of type of accident, must be treated as a potential victim of shock.

7. Trendelenburg position would be contraindicated for patients who are in shock.

Part III: In the space opposite each number place the letter of the one best answer.

1. A two-year-old child placed in a bomb shelter with a nurse and a group of other children is most likely to fear
    a. Desertion by mother
    b. Destruction by the bomb
    c. Separation from brothers and sisters
    d. That his food supply may run out

2. Symptoms of dehydration in infants are
    a. Diarrhea, sweating
    b. Bulging fontanels, edema
    c. Pulsating fontanels, very high fever
    d. Sunken eyes, loss of elasticity of the skin

3. An infant with crowing respirations can benefit most from
    a. Moist air
    b. Being placed on his back
    c. Having his head elevated
    d. Ice applied to his neck

The results of this test indicated that by and large, the students were able to transfer knowledge about everyday nursing practice to disaster situations. The students' performance on the test did, however, point to a few content areas that needed strengthening. For example, the answers to some questions indicated a need to remind students that they should review first aid content so that they could more readily see its application to the problems considered in disaster nursing. Since all students seemed to have difficulty in answering the questions pertaining to pediatric and obstetric nursing, one of the group projects in the disaster nursing blocks was centered on maternal-child care in a disaster situation.

Content

The content of the disaster nursing block has been changed somewhat in the light of the findings from the pretest and the experience of previous classes of students. The following outline indicates the content areas included in the ten class sessions provided for the first group of students.

OBJECTIVE*	CONTENT	METHOD OF PRESENTATION	CLASS HOURS
1	Introduction to types of disasters and problems caused by disasters	Lecture, discussion	2
1	Physical effects of disasters and introduction to methods of treatment	"	3
6,7	Principles of mass casualty care	"	2
5,6	Psychological reactions to disasters	"	1½
2,3,4	Evacuation	Students' Projects	2
2,3,4	Home shelter	"	2
5,7	Shelter living for large groups of people	"	2
3,6	Survival measures	"	2
7	Improvised equipment and modified nursing techniques	"	2
6,7	Emergency hospital	Film, field trip, discussion	2

The specific topics dealt with in the class sessions were as follows:

1. Types of Disasters
    a. Natural
    b. Enemy-caused

2. Effects of Disasters and Introduction to Methods of Treatment
    a. Types of injuries
    b. Fallout
    c. Radiation
    d. Chemical
    e. Biological

3. Citizen Responsibilities of Preparation
    a. Home shelter
    b. Sanitation in home
    c. Needed supplies (food, water, first aid, etc.)
    d. Isolation in home
    e. Facing separation of families
    f. Knowledge of warning signals

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*Objectives stated on page 206.

4. Survival and Protective Measures
    a. Self-aid
    b. Aid to others
    c. Fire-fighting

5. Shelter Living (for large groups)
    a. Psychological aspects
    b. Medical needs
    c. Sanitation--environment, food, etc.
    d. Isolation of those with communicable disease

6. The Responsibilities of the Practical Nurse in Disaster Emergency Care and Care of Mass Casualties
    a. Nursing measures in:
        Hemorrhage
        Obstructed airways
        Burns
        Fractures
        Wound-bandaging and dressings
        Radiation exposure
        Psychological aspects
        Medical needs
        Sanitation--environment, food, etc.
    b. The practical nurse working with other members of the health team

Student Projects

The students' presentations of subjects relating to disaster nursing constituted an effective part of the disaster nursing block. The students formed into groups of from four to six, and each group selected a topic and presented it before the class in the form of an oral report, a panel discussion, or a skit or some other kind of demonstration. The students were given written instructions and a list of suggested topics from which they might make a selection if they chose. In addition, the instructor provided guidance in at least two conferences, one during the early planning stages and one shortly before the presentation. The utilization of at least ten sources of information was required, including resource persons in the school, community agencies, and pamphlets, books, and magazine articles.

At the time of the oral presentation, the group was required to give the instructor a written summary of the project, including a detailed outline of the information to be presented, an indication of whether this information should be known to all citizens or to health personnel specifically, an indication of what responsibilities the licensed practical nurse might be expected to assume, and a list of all the resources used.

The topics suggested to the first group of students included the following:

1. Evacuation.--Include: Warning signals; methods of communication; evacuation of citizens from homes--plan for Minneapolis; evacuation of patients and personnel from hospitals--plans for Twin Cities' Hospitals; supplies each citizen is to have in his car; plans for reuniting families separated during evacuation.

2. Home Shelter.--Include: Types of home shelters; sanitation; needed supplies (food, water, first aid); fire fighting.

3. Shelter Living--Large groups of non-injured survivors.--Include: Medical needs; sanitation; psychological aspects; care of special groups such as infants, mothers and newborn, geriatric individuals, people with communicable diseases.

4. Survival Measures.--Include: Emergency nursing measures in hemorrhage; obstructed airways, burns, and fractures; care of wounds; radiation exposure; responsibilities of the practical nurse working with other members of the medical team.

5. Isolation in the Home.--Include: A demonstration of how you would actually carry out isolation in the home.

6. Improvised Equipment.--Include: Equipment which may have to be improvised in order to carry out nursing care; methods which may be modified in the home in order to carry on safe nursing activities.

7. Agencies Involved in Planning for Disasters.--Include: The role and coordinating efforts of the American Red Cross; Office of Civil and Defense Mobilization, fire and police departments. What courses pertaining to disasters are available for the general public and for nurses?

EVALUATION

A written examination given at the end of the disaster nursing block was useful in the evaluation of each student's achievement and also in the evaluation of the block of instruction. Because the questions asked on this examination indicate the type and depth of knowledge expected of the graduating student in practical nursing, the questions are reproduced here.

Objectives*

1 1. What major types of injuries would you expect to find immediately following a nuclear explosion?

3,6 2. Every injured person, regardless of type of accident, must be treated as a potential victim of __________.

3,6,7 3. List five immediate lifesaving measures for giving first aid to the injured.

3,6 4. List three objective symptoms of shock that may be detected by by the person giving first aid.

6 5. Name and explain the four major categories used in sorting mass casualties.

1,3,6 6. Give four examples of accidents that will probably cause a person to stop breathing.

3,6 7. The most rapid way to clear an air passage is to ________.

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*Objectives stated on page 206.

Objectives

3,6 8. The four initial steps in beginning mouth-to-mouth resuscitation are:

3,6 9. What is the main precaution to observe in giving mouth-to-mouth resuscitation to an infant?

3,6 10. Oral fluids should not be given to any person who:

3 11. The amount and type of ingredients to be mixed in one quart of water when making a home solution to treat shock are:

1,6 12. Give five major nursing measures to consider in giving supportive care to victims of radiation exposure.

1,6 13. What is the major danger in overworking a person who is in the latent period of radiation sickness?

1,6 14. What are the three earliest symptoms of radiation sickness?

1 15. List the three types of body cells which are the most susceptible to radiation.

3,4,5 16. The most effective means of removing radioactive fallout:
a. from a person__________
b. from clothing__________

3,6 17. Give four symptoms that would indicate a person has a fracture.

3,6 18. What areas must you include when you splint a fracture?

7 19. How can you home sterilize linens?

4 20. In routine health teaching, what measures could the average citizen be expected to follow which could protect large numbers of people in mass disasters?

2 21. The official state agency responsible for over-all medical and health care is ______________.

1,5 22. What major problems, other than physical injuries, are created by mass disasters?

5 23. Two types of problems to be expected in shelter living are:

2 24. Where will the state government be relocated in the event that St. Paul has to be evacuated?

4 25. List three major points which were emphasized in the film "The House in the Middle."

2,3,4 26. The radio frequency numbers of the Conelrad Stations are _____ and _____.

4,7 27. An easily obtained and inexpensive substance which can be used to disinfect body excreta is ____________.

Each student's achievement was also evaluated on the basis of her participation in the planning and presentation of a student project and the written report of this project.

CONCLUSIONS AND RECOMMENDATIONS

By the time the NLN project had come to an end, the faculty had concluded that the teaching of disaster nursing concepts in a practical nursing program can serve two purposes. One, it can help the student fulfill her responsibility as a citizen and as a future licensed practical nurse in the event of a natural or enemy-caused disaster. Two, it can result in a strengthening of the existing curriculum by challenging the faculty to provide learning experiences that will help the graduate function in settings other than the usual setting of hospital or home. Accordingly, the instructional plan developed during the NLN project is being continued in the University of Minnesota practical nursing program.

The faculty also made three recommendations concerning the teaching of disaster nursing in the University of Minnesota practical nursing program. These recommendations may or may not be appropriate for other educational programs in practical nursing.

1. The possession of a current first aid certificate should continue to be a prerequisite for admission to the practical nursing program. If the prospective student does not have this certificate at the time of admission, the Red Cross First Aid Course must be taken during the first half of the program.

2. In the practical nursing program, the bulk of disaster nursing content can be appropriately taught in a block in the latter portion of the year's study. Where course content allows easy and natural association with a disaster situation, such as isolation precautions, "sprinkling" or integration can be planned.

3. The inclusion of disaster nursing content in the practical nursing program is intended to provide the student with a background knowledge of basic concepts and specific facts essential to a general understanding of civil defense preparedness and mass casualty care, but the program cannot provide all the information or all the experiences the student should have to be fully prepared to function effectively as a licensed practical nurse in a disaster. Therefore, in order to be well informed and prepared, the faculty recommended that the graduates of the practical nursing program take advantage of various educational programs which pertain to problems created by disaster. It pointed out that these programs may be inservice education programs provided by the employing agency or workshops and institutes provided by nursing organizations or community agencies.

DEMONSTRATION IN THE NURSING SERVICE OF THE MASSACHUSETTS GENERAL HOSPITAL

GENERAL DESCRIPTION OF THE NURSING SERVICE

The nursing service is one of the two divisions of the Nursing Department of the Massachusetts General Hospital, the other being the school of nursing.

The nursing service is responsible for the nursing care of all patients in the hospital and all those attending the ambulatory patient clinic and for providing an environment that is conducive to learning and research.

The employees of the nursing service number 712, of whom 412 are professional nurses, 72 are licensed practical nurses, and 228 are nursing aides and other personnel who have had no preservice preparation in nursing.

Top-level administrative personnel consist of a director, an associate director, a coordinator of patient education and nursing referral, a coordinator of team planning, a coordinator of staff education, and 7 assistant directors--one each for the 5 inpatient units, one for the 3 operating rooms, and one for the ambulatory patient clinic.

The programs for the development of nursing service personnel are conducted under two kinds of auspices. The staff education department is responsible for orientation, ongoing education, and specific programs for the various categories of nursing personnel regardless of their place of assignment. In addition, each assistant director is responsible for the development of programs to meet the needs of the employees in her unit; these programs are usually concerned with a particular clinical area.

PHILOSOPHY ABOUT DISASTER NURSING PREPARATION

The following statement of philosophy was developed for the entire Nursing Department of the Massachusetts General Hospital.

> In peacetime, the professional nurse has responsibilities for helping people maintain their optimal health, for giving comprehensive care based on the needs of the person who is ill, and for assisting people who have been ill to adjust to their respective roles in everyday living as they return to their homes and communities.
>
> When disaster strikes, an irreversible change in a socio-cultural pattern results. We live in the age when not only natural disaster but also disaster from modern warfare may strike. The government, having recognized this impending threat, has planned for its survival and the survival of its people, through the establishment of the Office of Civil and Defense Mobilization. The armed services and the Red Cross have demonstrated how one can survive when there is a plan and people are organized to carry out the plan.
>
> Much of the knowledge needed to cope with natural disasters, such as fires, floods, and explosions, is basic for war disaster nursing, but

the latter calls for an attitude and knowledge unique to casualty care. In war disaster, the philosophy of sorting patients according to priorities for treatment and giving the best care to the most patients needs considerable interpretation to nursing groups. It is anticipated there will be a great disparity between the number of victims and medical personnel and facilities. If the survivor with the most knowledge and leadership in the situation is a nurse, she will be expected to extend the practice of nursing beyond the usual boundaries of peacetime nursing. The clinical and value judgments may not always be the best, because the shock of disaster may numb her acuity of observation and judgment in various ways and in varying degrees just as it numbs the acuity of other survivors. However, the victims and the government will expect the nurse to assume her professional and civilian responsibilities to the best of her abilities. In order that she may know what to do and how to do it, the nurse must be taught and motivated to prepare herself and others to assume active roles in the areas of self-survival during disaster.

We believe this philosophy is one which should permit us to function as individuals and as nurses in a disaster. It is the responsibility of the School through its various committees for disaster to interpret the philosophy to the faculty. The faculty, having accepted it, has the responsibility for incorporating it into the various strands for background teaching and in the core course for the students. The acceptance of the philosophy and generalizations of disaster nursing should help the student to prepare herself to interpret her possible role as a nurse within the framework of medical plans for disaster and motivate her to keep abreast of the current changes and the implications for nursing.

Since we are living in a nuclear age, the Nursing Service at Massachusetts General Hospital believes that all its personnel should be prepared to function effectively in time of disaster when the disaster is contained within the hospital and immediate community and that its personnel should receive basic instruction in preparation for large-scale disaster involving mass casualty care.

GOALS FOR THE PROJECT

A committee was appointed to plan and direct the activities of the disaster nursing study. This committee consisted of persons who had had disaster nursing experience or had attended civil defense or mass casualty courses and included representation from each inpatient unit, the operating rooms, and the staff education department.

The goals of the program planned by the committee and accepted by the nursing service administration were stated in the form of functions and activities. These goals were:

1. To provide a core course in disaster nursing for professional and practical nurses.

2. To provide basic survival, rescue, and first aid training for nursing service personnel.

3. To extend the skill levels of nursing service personnel.

4. To teach nursing techniques to non-nursing personnel and volunteers.

5. To assist in providing training resources for other groups as requested.

6. To integrate disaster training in day-to-day nursing practice.

7. To orient nursing service personnel to the hospital disaster plan.

8. To evaluate disaster nursing training progress.

SURVEY OF EXISTING INSERVICE EDUCATION ACTIVITIES

A survey was made of the courses and other planned activities currently being conducted by the inservice education department to determine the extent to which they were contributing to the attainment of the goals of the disaster nursing project.

Two courses in disaster nursing were found to be contributing to the achievement of the second objective--"To provide basic survival, rescue, and first aid training for nursing service personnel." One of these courses was for professional and practical nurses, the other for aides, ward helpers, and ward secretaries. It was from the first of these courses, which included the Red Cross Standard First Aid Course as well as content on Civil Defense and survival measures, that the core courses in the project were developed. The second course was also developed further as part of the project.

Several courses and activities were found to be contributing to the achievement of goal 3--"To extend the skill levels of all nursing service personnel." These were:

1. A supervisors' program--consisting of a 36-hour course designed to assist the supervisor to develop a better understanding of her role and to guide her in developing attitudes conducive to effective supervision.

2. A basic head nurse program--a 34-hour course for head nurses, assistant head nurses, and staff nurses who show potential for a head nursing position. This is essentially a course in ward management.

3. An advanced head nurse program--consisting of a 15-hour course for head nurses who have completed the basic program. Content includes leadership principles, time planning and assignments, and on-the-job teaching techniques.

4. A nursing aide program--consisting of a 30-hour on-the-job training course for personnel without previous experience as aides.

5. Monthly inservice education meetings for staff nurses and licensed practical nurses. These meetings emphasized nursing skills and techniques.

The staff education department was also participating in a training program for x-ray technicians, in which several hours were allotted to the teaching of simple nursing procedures such as temperature, pulse, and respiration;

blood pressures; and enemata. This activity was contributing to the attainment of goal 4--"To teach nursing techniques to non-nursing personnel and volunteers."

THE CORE COURSES

Initially, the committee planned only one core course in disaster nursing for professional nursing personnel in all types of positions and practical nurses. The first two times this course was given, priority in attending it was extended to those in key nursing service positions--the assistant directors, supervisors, and head nurses--for the reason that these groups constituted the most stable personnel and that therefore it was from their preparation that the hospital was most likely to realize the benefits from its investment in the course. Professional staff nurses and licensed practical nurses were included among the participants in the third and fourth classes that took the course. The participant-evaluations that were made at the conclusion of these classes indicated that there was need for two separate core courses--one for professional nurses and one for practical nurses. Accordingly, a course was developed for each of these groups.

Both the professional nurse course and the practical nurse course were modifications of the original course and reflected the framework within which this course had been constructed. This framework was developed in the light of two considerations. First, it was recognized that this course was only one of many conducted by the staff education department and, although a vital part of the inservice education program, could not interfere unduly with other essential staff development programs. Second, the Disaster Nursing Committee was hopeful that eventually all the professional and practical nurse personnel would attend the course or courses. In view of these considerations, it was concluded that the core course for professional nurses should provide a minimum amount of core content that would be appropriate to the needs of all professional nurses, regardless of their positions within the nursing service. The framework for the core course for practical nurses was similarly constructed.

Teaching Resources and Methods

Insofar as possible, the speakers and discussion leaders for the courses were drawn from the hospital personnel. The nurse instructors, for the most part, were members of the Disaster Nursing Committee. As has been pointed out, they had had previous preparation or experience in disaster nursing. To help them to bring their knowledge of mass casualty preparedness up to date, arrangements were made for several of them to attend mass casualty courses offered at Walter Reed Hospital, Brooklyn, Battle Creek, Fort Sam Houston, and the Massachusetts Civil Defense Agency. All the physician instructors had had military experience.

Speakers from the Massachusetts Civil Defense Agency and the Boston Chapter of the American Red Cross were called on for discussions of the structure and function of their organizations.

When an instructor for an important area of study could not be found, the committee used films as a substitute. For example, the film "Disaster Anesthesia" was used because an anesthetist was not available to present the needed material.

Visual aids were obtained from several sources: American Red Cross, Massachusetts Civil Defense Agency, Regional Headquarters of the Office of Civil and Defense Mobilization, United States Army, and American Medical Association's Motion Picture Library.

In addition to lectures and films, practice sessions were used. Also, group problem-solving sessions were instituted upon the suggestion of a head nurse who, after completing the course, encountered a disaster-like situation in her ward for which she thought she would have been better prepared had she had the opportunity to practice some of the concepts presented in the course.

Scheduling

For the first three groups, the course was given for one two-hour session per week over a period of three months. This arrangement caused considerable dissatisfaction. The participants found that it was frequently difficult to arrive on time for the classes, to leave job problems and worries behind them, and to adjust to the abrupt change in degree of physical activity. The staff education department found that it was necessary to cancel the monthly inservice meetings for both the professional staff nurse and practical nurse groups and to postpone the start of other scheduled courses until the disaster nursing course was completed.

Accordingly, the schedule was changed to one of three all-day classes that were held one day a week for three successive weeks. This pattern was well received by all concerned. Although the course was presented in a more concentrated period of time, the participants had three weeks to think about and work through their reactions to the content. The personnel conducting the course were of the opinion that those who attended the fourth course were more stimulated and involved in the total program than those who had had the more prolonged course. Moreover, the all-day meeting pattern permitted attendance by those who were permanently assigned to evening and night tours of duty.

This is not to say that all problems were automatically solved by the new pattern of scheduling. At the time the NLN project came to an end, efforts were being made to work out some plan whereby operating room personnel could attend the course.

COURSE FOR PROFESSIONAL NURSES

The content for the original course was developed on the basis of a survey of the usual content in a disaster nursing course. The resources used in this survey included the Medical Service, Massachusetts Civil Defense Agency; the Disaster Nursing Committee, Massachusetts League for Nursing; and the Boston Chapter, American Red Cross.

Experience with the course suggested the need for some changes in format and content. Instruction on the organization and operation of Civil Defense and medical installations was combined with information about Red Cross agreements, and instruction on radiation syndrome was included in the class devoted to home and shelter preparedness.

The outline of topics in use at the time the NLN pilot project came to an end is presented here.

UNIT I: Need for Planning to Cope with Conditions Created by Disasters

A. Threat of Disaster
   1. Natural
   2. Enemy-caused

B. Nature of Nuclear, Biological, and Chemical Warfare
   1. Protection and identification
   2. Evacuation and shelter
   3. Survival training
   4. Decontamination
   5. Conventional weapons
   6. Management of injured
      a. Artificial respiration
      b. Syrettes - Film: "Nerve Gas"

C. Organization and Operation of Civil Defense
   1. Relationships and functions
   2. Red Cross agreements
   3. Medical installations

D. Nurses' Responsibility in Disaster
   1. Leadership
   2. Management
   3. Nursing care (clinical nursing)
   4. Teaching

E. Psychological Implications of Disaster
   1. Personal reactions
   2. Psychological first aid
   3. Management of "disaster fatigue" victims
   4. Psychiatric disorders

F. Hospital Disaster Plan

G. Shelter and Home Preparedness

UNIT II: Management of Mass Casualties

A. Triage
   1. General principles and priorities in treatment
   2. Identification of casualties

B. Management of Shock
   1. Recognition
   2. Treatment at point of rescue
   3. Treatment at First Aid Station
   4. Treatment at hospital

C. Management of Burns
   1. Estimating extent and severity
   2. Treating at point of rescue
   3. Treating at First Aid Station
   4. Treatment at hospital
   5. Fluid replacement therapy - Practice Session

D. Management of Wounds
    1. Treatment at point of rescue
    2. Treatment at First Aid Station
    3. Treatment at hospital
    4. Problem of special types of wounds

E. Management of Fractures
    1. Recognition of fractures
    2. Immobilization and transportation of casualties with fractures
    3. Treatment at First Aid Station
    4. Treatment at hospital
    5. Improvisation of splints

F. Health Services in Disaster
    1. Provision of safe water and food supplies
    2. Provision of health services to evacuees
    3. Health care of special groups
    4. Prevention and control of communicable disease and biological warfare

G. Anesthesia for Mass Casualties
    1. Role of nurse
    2. Types of anesthetics

H. Improvisation of Equipment
    1. Making use of available resources and materials

I. Emergency Maternity Care
    1. Normal delivery
    2. Abnormal presentations
    3. Hemorrhage
    4. Care at site of delivery, First Aid Station, and hospital

J. Group Problem Solving

Group Problem Solving

First Situation:

On Friday, May 10th, at 11:05 a.m., there is an explosion in a chemical plant situated in Cambridge. The emergency ward at the Massachusetts General Hospital is notified of this disaster at 11:15 a.m. with the report that casualties are on the way and there are "hundreds."

Operation Coconut is put into effect. The foyer of the White Building is set up as a receiving and triage center. Since the reports of the disaster now indicate approximately 200 casualties will arrive, the Emergency Ward is organized to receive only those casualties with acute respiratory conditions needing immediate resuscitative treatment. White 6 is selected as the ward to empty and then receive up to 50 patients with burns. The Overnight Ward is also selected to empty and to receive up to 50 patients with injuries involving fractures, etc. It is anticipated that approximately 80 other casualties will have minor injuries requiring services of the Surgical Clinic and no hospitalization.

Problems:

I. You are the supervisor/assistant director in charge of the White Building and the over-all nursing care of these patients.

   a. What are your problems?
   b. What information will you need?
   c. From whom will this information come?
   d. Graph out your plan of action.

II. As head nurse/charge nurse on White 6 you are informed that the expected casualties will present the following pattern roughly:

30 - burns ranging from 40% to 80% body area.
20 - minor burns but with complications--respiratory and traumatic.

You are to organize for emptying the ward and the reception and care of these casualties.

1. What are your problems?
2. What information will you need?
3. From whom will this information come?
4. Graph out your plan of action.

Second Situation:

A tornado, followed by torrential rains, struck Boston at 7:00 p.m., November 24th, without warning. The path of the tornado was ¼ mile wide and 1¾ miles in length where it passed over a small section of the residential section in the southern part of the city. Power lines were broken and lying in the streets, which were blocked by fallen trees and debris. The main business section in which the Red Cross chapter is located was not affected.

First reports stated that approximately 100 homes were affected, 4 of which were destroyed and 96 damaged. One school building, a church, a few small neighborhood stores, restaurants, and gas stations were damaged. People are wandering around in the ruins, trying to gather up odds and ends from their homes.

1. The rescue squads have estimated 16 persons killed and at least 150 injured.

2. A large number of the injured have been admitted to the already overtaxed Boston City and Massachusetts Memorial Hospitals.

3. The dead have been taken to the morgue, and the majority have not been identified.

4. The police and rescue workers have already directed about 200 people to the South End House and Cathedral High School for temporary shelter. They report that a number of small children and babies are in the shelter and that some of them are sick.

5. The report has been received that many of the injured have been going to "Y" drug store for first aid treatment. The druggist and 2 clerks have been trying to handle the situation and are running low on supplies. The chapter medical chairman is checking and may set up a first aid station there.

Problem I:

You are told to report to the first aid station, stopping at the "Y" drug store en route to pick up supplies. Assuming that the station may be kept open beyond a 24-hour period, list the minimum essentials you will try to obtain.

1. Supplies
2. Medications
3. Equipment (either procured or improvised)

Problem II:

The medical chairman has set up a temporary first aid station in an empty office building near "Y" drug store. You have been assigned as the nurse in charge. You have been told by the nurse vice-chairman that a first aid worker is en route with some supplies.

Upon arrival you find an old desk, a few chairs, a couple of packing boxes, the medical supplies, and the first aid worker. The power is still off and the phones out of order.

Patients are being redirected from "Y" drug store where supplies have run out.

What immediate steps would you take?

Problem III:

You have been assigned the responsibility of organizing and providing for nursing care in the shelter. The Red Cross disaster nurse vice-chairman is assigning another nurse and a practical nurse to help you and will send more nursing staff if you need them.

Upon arrival, you find that the shelter manager is trying to calm a hysterical pregnant young woman who doesn't know whether her injured husband is dead or was taken to some hospital. Several volunteers are trying to register the refugees.

What immediate steps would you take?

How would you delegate responsibility and what initial instructions would you give to the 2 staff assigned?

Problem IV:

Among the shelter occupants are 15 aged persons, several of whom have problems that require special attention:

1. An elderly woman lost her hearing aid in the confusion of being rescued and is quite disturbed without it.

2. Another older woman with a chronic gastric ulcer requires frequent feedings.

3. An aged man had his glasses blown off and his dentures sucked out by the tornado.

How would you handle each of these problems?

Problem V:

While you were making your initial health inspection of the shelter occupants, you found the following problems relating to communicable disease control:

1. A 6-year-old child with suspected mumps
2. A 35-year-old woman with a dry, hacking cough
3. An 8-year-old child with a rash
4. Several cases of pediculosis

The visiting physician and the health officer have decided that the first 3 listed should be cared for in the shelter until other arrangements can be made.

What are these other arrangements?

How would you plan for their care while they remain in the shelter?

Problem VI:

A number of the shelter occupants have been separated from their families. Some of the relatives are seriously injured in hospitals, and others have been killed.

1. One man lost his wife and 4 children. He and his 2-year-old boy are the only survivors. He is uncommunicative and eats very little.

2. A woman with 3 small children is restless and anxious because her husband and teenage daughter are critically ill in different hospitals. Her mother and father were killed.

3. An elderly man wanders around the shelter, talking incoherently, hunting his wife. She was killed, and he apparently has no relatives.

How would you handle these problems?

First Aid Practice Sessions

- I. Artificial Respiration
  - A. Definition
  - B. When used
  - C. Demonstration and practice of methods
    - 1. Neilson
    - 2. Mouth-to-mouth insufflation
- II. Control of Hemorrhage
  - A. Use of tourniquet
  - B. Use of bandages
    - 1. Head
    - 2. Cap
    - 3. Chest
    - 4. Shoulder
    - 5. Hand
    - 6. Extremity
    - 7. Sprained ankle
- III. Splints and Transportation
  - A. Review of signs of fractures and first aid treatment
  - B. Demonstration and practice of splints for injury to--
    - 1. Collarbone
    - 2. Rib
    - 3. Arm
      - a. Elbow
      - b. Forearm
      - c. Wrist
    - 4. Leg
      - a. Upper and lower parts
  - C. Carries
    - 1. Blanket carry
    - 2. Two-man carry
    - 3. Chair
    - 4. Pack strap
    - 5. One-man carry
    - 6. Three- and six-man carry

CORE COURSE FOR PRACTICAL NURSES

The early experience with the course for both professional and practical nurses served as a basis for developing the core course for practical nurses only. The outline of topics used in this course was much the same as that for the professional nurse course, but some of these topics were presented with less depth, and others received a different emphasis.

Among the changes were the following:

1. Omission of administration of nursing services.
2. Change in emphasis from administration or management role to assistant role in:

    a. Anesthesia.
    b. Deliveries.
    c. Psychological care.

3. Limitation of scope of training responsibilities to the training of auxiliary workers, and emphasis on preparation for this type of training.

The practical nurse core course included the same first aid practice sessions as the course for professional nurses.

EVALUATION OF THE CORE COURSES

Reactions of Professional Nurses

The reactions of professional nurses to the core course were investigated in two ways:

1. Through an opinionnaire, filled out by those who had taken the course, that inquired about which aspects they liked and which they disliked, and that asked for suggestions concerning future courses.
2. Through interviews with a few persons who had taken the course. These persons were asked:
    a. Have you been able to transfer any of the material learned in the course to everyday situations encountered in the hospital?
    b. Do you feel that there is any difference in your behavior or reaction to stress since taking the course?

The opinionnaires revealed that many nurses wanted more classes in actual nursing. They felt the basic course helped them bring up to date the content in nursing practice. Several of the younger graduates asked that more time be devoted to the managerial and teaching aspects of disaster nursing or nursing in mass casualty situations.

In the interviews, several nurses stated they had begun the course with a pessimistic viewpoint, thinking only in terms of nuclear warfare. They had had a "When the bomb falls, no one will be here, so what's the use?" type of attitude. After the course, they felt differently and wanted, as one nurse said, "to be around and see what things would be like and be able to help."

Interests varied according to individual needs. One nurse felt the class on proper handling of patients, with emphasis on transportation, was a waste of time, while another nurse had used the knowledge learned in this class. A few head nurses felt there was no similarity between disaster problems, on the one hand, and on the other, the present shortage of personnel combined with a high census.

One supervisor was able to compare her actions and behavior in "disaster" situations before and after taking the course. The generalized aspects of the hospital for disaster preparedness helped her in the over-all managerial aspects as well as in the planning for specific nursing care. Because the majority of those interviewed had not encountered problems of disaster nursing following their taking the course, they could not comment on behavioral changes under stress.

Reactions of Practical Nurses

The practical nurses who participated were also asked to answer an opinionnaire. All of the group indicated that the course was worthwhile and should be required for all practical nurses. Several mentioned that too much information was presented in too short a time. Others recommended extending the course and lengthening the time for certain topics. The need for more extensive review of first aid measures was listed by a third of the group.

When the instructors were questioned concerning the responses of the practical nurses to the course, they indicated that:

1. Questions were raised more frequently by this group than by the professional nurses.
2. Differences in reactions that might have occurred because of the wide variation in age and years of experience seemed to be nullified by their common status.
3. Active participation reached 100 percent in most classes.
4. Throughout the course, the licensed practical nurses showed understanding of the professional nurse's leadership role.
5. The group as a whole revealed a good grasp of the reality factors in a nuclear disaster.

Pre- and Post-Testing

The acid test as to whether the core courses were effective, of course, lies in the answers to two questions:

1. Does the course cover materials not already known to the participants?
2. Does the course result in a significant increase in knowledge of the kind that will help a nurse function efficiently in a disaster?

To obtain an objective evaluation of the two core courses in terms of these questions, a test was developed for administration before and after each course.

In constructing the test, the committee surveyed the content of the courses and set aside those subjects that covered information of a "refresher" nature. This elimination survey left six broad subjects that related to information deemed essential to nursing in disaster or to the expansion of the nurse's role in disaster. The test on these six subjects that was then developed contained the following 14 questions:

1. What is the relationship of the American Red Cross organization and the Civilian Defense organization for responsibility in a natural disaster?

2. What is meant by Triage?

3. How does the concept of triage in a hospital-contained disaster differ from the concept of triage in a nuclear attack?

4. Irrespective of the kind of injury, what physical conditions would assume top priority for treatment?

5. What is radioactive fallout?

6. What protective measures against radioactive fallout are available?

7. What are four signs to observe while administering drop ether anesthesia?

8. List four public health problems that you would face in caring for a large group of survivors under disaster conditions.

9. In an emergency maternity delivery, what presentation would you not attempt to deliver?

10. What is the rule of nines in determining the extent of body burn? (Use stick figure to illustrate if desired.)

11. What is the major differentiation in the following classification of burns?
    a. Third degree -
    b. Second degree -
    c. First degree -

12. Formula: % of body burns x weight in kilograms = total of plasma replacement. Determine the amount of plasma therapy for a burn casualty weighing 154 lbs. with 35% body burns. Then indicate the amount of saline and of dextrose in water that may be added in 24-hour period.

13. List four main features of the treatment for extensive burns.

14. Situation: You are on duty. You have been notified at 3:00 p.m. on Friday that 100 patients from a train wreck are being admitted to the hospital. At this time there is no way of knowing how many patients actually will be admitted or how many will be sent to your ward.

    What do you see as your role and responsibility? State briefly and, if possible, outline your answer.

This test was utilized to measure the progress achieved in both the professional nurse and the practical nurse core course. However, although the professional nurses and practical nurses who took the test were asked the same questions, the two groups were provided with different answer sheets, and, for certain questions, different answers were considered correct. For example, the practical nurse examinees were not expected to know the scientific bases for some of the nursing decisions, the fluid estimate for burns, how to administer anesthetics, or how to manage normal deliveries, and account was taken of the difference in the achievement level expected of them in scoring their answers to questions on these subjects.

For both groups, the maximum score possible was 100.

The test was given to 15 professional nurses and 16 practical nurses before they took the courses and again at the conclusion of the courses. It was also given to another group of 55 professional nurses who had not taken the course.

The results, shown in Table 1, indicated that considerable learning had taken place on the part of the members of these two groups. Also, a comparison of the means of the scores made on the pretesting by the two groups of professional nurses suggested that the group of 15 was a fairly typical one insofar as a before-course knowledge of disaster nursing was concerned.

The test was also given to 11 of the 15 professional nurses and to 8 of the 16 practical nurses one year after each group had taken its core course. A comparison of the means of the scores made by these two groups of 11 and 8 on the three occasions when they were tested indicated that there had been some decrease in the examinees' knowledge about disaster nursing in the year following the course but that they had considerably more knowledge at the end of the year than they had had prior to taking the course. When the test was given to other groups of registered nurses one year and two years after they had completed the course, the results showed that a considerable amount of information had been retained but that there was some loss, most of which had occurred after the end of the first year.

On the basis of these findings, it was decided that:

1. The two core courses should be continued for nurses who had not had them.
2. Refresher courses should be offered every two years for the professional nurses and every year for the practical nurses.

Table 1. Mean Scores Made on Test Administered Prior to and at Completion of Core Courses in Disaster Nursing

Group Taking Test	Mean Scores Made	
	Before Course	At Completion of Course
15 Professional Nurses	38.7	74.5
55 Professional Nurses	37.9	--
16 Practical Nurses	16.9	47.3

THE PREPARATION OF AUXILIARY NURSING SERVICE PERSONNEL

In line with the belief that all persons employed by the nursing service should be prepared to function in a disaster, a training program for nursing aides, ward helpers, and ward secretaries was developed.

The purposes and objectives of this program were to:

1. Familiarize personnel with the general need for civil defense.
2. Help personnel to develop an understanding of the problems inherent in any disaster.
3. Orient personnel to civil defense functions within the hospital and the community.
4. Familiarize personnel with the over-all hospital disaster plan.
5. Prepare personnel to function in time of disaster to meet their own needs and to assist in meeting the needs of mass casualties.
6. Provide basic instruction in first aid.

The subjects dealt with in this training program and the methods used in presenting the content were as follows:

1.	Standard Red Cross Course in First Aid (Certificate given)	10 hours
2.	Lecture: a. Threat of disaster, natural or enemy-caused	1 hour
	b. Hospital disaster plan	1 hour
	c. Health services in disaster	1 hour
	d. Psychological considerations in disaster	1 hour
3.	Films:	approximately 5 hours
	a. Disaster and Public Health Aspects	
	b. Lease on Life (Civil Defense Hospital)	
	c. Care of Patients with Burns	
	d. Disaster Strikes	
	e. Day Called X	
	f. Control of Hemorrhage	
	g. Disaster and You	
	h. Mouth-to-Mouth Rescue Breathing	
	i. Sucking Wounds of the Chest	

NURSING AND THE HOSPITAL PREPAREDNESS PLAN

The nursing service subcommittee of the hospital disaster committee serves as the group responsible for the preparation and coordination of the disaster nursing plans that are utilized when a disaster affects the hospital or the immediate community. During the pilot project, the committee's activities were directed toward the preparation of a simple but workable plan. This plan included expedient utilization of present facilities, expansion potential, functions planned for each clinical area, depth of command for administrative personnel, specific assignments, alternate assignments, and an effective system for locating personnel.

Development of a Record

Efforts to improve the system for locating personnel at any given time resulted in the development of a new Emergency Data Card, which is reproduced on the next page.

Preparation for Fire

By the time the NLN project came to a close, the plans had had two types of testing: (1) several actual small disasters that had occurred—a plane accident, a bombing, and a fire—and (2) practice fire drills that involved patients as well as personnel. The practice drills, which are part of the annual fire prevention control and patient evacuation training program, revealed that several areas of the plan were in need of revision, namely:

1. Communications system.

2. Use of equipment.

3. Methods of moving patients.

4. Responsibilities of the charge nurses.

5. Responsibilities of the other personnel on patient units.

During a practice drill in one of the units, it was discovered that either the mattress fire poles did not fit the mattresses or, if they did, they were too large to go around the stairwells. The maintenance department made the poles smaller. Arrangements were made to place instructions on how to make blanket stretchers alongside these poles. The staff education department taught the head nurses how to make these stretchers so that they could in turn teach their staffs.

Resuscitation

The nursing service, through the Disaster Nursing Committee, contributed to the over-all hospital disaster training program in two other ways. It initiated showings of the training film "Mouth-to-Mouth Rescue Breathing." In a period of three days, over 600 employees saw the film and received wallet-sized instruction cards on the technique. Subsequent to these showings, the following occurred:

1. The Nursing Practice Committee decided to incorporate the technique in the Procedure Manual.

2. Special airways that had been developed for use in the mouth-to-mouth airway technique were purchased for each unit.

3. Requests were received for additional showings of the film to groups both in and out of the hospital.

EMERGENCY DATA CARD

EMERGENCY DATA **Bldg.** Bf BM PH VB Wh **Floor** 1 2 3 4 5 6 7 8 9 10 11 12

Name	Unit No.
Address	
Home Phone	Hosp. Phone
Date Employment	Budget - Job

MALE ☐
FEMALE ☐

AVAILABILITY TO THE HOSPITAL

- I. Immediate area of the hospital - short walking distance ☐
- II. Boston Area - 5-15 minutes walk or ride ☐
- III. Greater Boston Area - 15-30 min. walk or ride ☐
- IV. Long distance from hospital 40-60 minutes or more ☐
- V. Transportation usually by auto ☐

Emergency Wd. ☐
Clinics ☐
Operating Rm. ☐
Overnight Wd. ☐
Recovery Rm. ☐

Category

Graduate Nurse ☐
Lic.Prac. Nurse ☐
Hospital Aide ☐
Secretary ☐
Util. Rm. Worker ☐
Ward Helper ☐
Asst. Director ☐
Supervisor ☐
Head Nurse ☐
Staff Nurse ☐
Instructor ☐
Other ☐

EXPERIENCE (Yrs.)	1-5	5-10	10 or more
Operating Rm.			
Emergency Wd.			
Recovery Rm.			
Obst. or Del. Rm.			
Psychiatry			

NS213

Survival Care

The second contribution to the over-all hospital disaster training program was an exhibit on Survival Care. Part of the display consisted of a series of translucent films mounted in lighted shadow boxes, which depicted the various factors that contribute to an effective survival care program for an individual, family, and community. The exhibit also included a sample pantry containing foods that a family might stock in preparation for a disaster. Located in a prominent corridor in the hospital, the display was seen by all hospital personnel.

STAFF ROTATION

As part of the disaster nursing project, the Committee recommended that the nursing service develop a rotation plan that would provide all nursing personnel with a minimum experience in the emergency ward, an acute surgical unit, and an acute medical unit.

The rotation experience was of two different types:

1. The observation type which consisted primarily of an orientation to the new area and usually did not aim at helping the individual to learn or perfect any skills.

2. The training type in which arrangements were made for the individual to spend sufficient time in a unit to develop or perfect new skills and abilities.

The implementation of the rotation plan posed some problems. Up to the time when the NLN project was completed, observations indicated that the ones who sought rotation were those who had attended a core course.

CONCLUSIONS

By the time the NLN pilot project came to an end, the following conclusions had been reached:

1. A workable hospital disaster plan is essential for instituting a program of preparedness for nursing services.

2. A permanent special committee appointed by nursing service is needed to define the scope of and develop a program for disaster nursing preparedness.

3. Administrative support is needed to implement the proposed program.

4. The current inservice program of staff education can facilitate the implementation of the program.

5. A basic course in disaster nursing is a necessary part of a nurse's preparation for employment in the hospital.

6. Refresher courses in disaster nursing should be offered every two years for the professional nurse and at least yearly for the practical nurse to compensate for loss of knowledge and introduce new materials on the subject.

7. Separate courses are needed for:
   a. professional nurses.
   b. practical nurses,
   c. nonprofessional nursing service personnel.

8. The time plan for the courses must be adjusted for personnel from all nursing units.

9. Planned staff rotation is an essential part of disaster nursing preparedness.

THE NLN COMPREHENSIVE ACHIEVEMENT TEST IN DISASTER NURSING

The development of a standardized achievement test in disaster nursing that could be used by the majority of students in basic professional programs was an essential part of the project. This test, which was designed to test the effectiveness of the teaching of disaster nursing in baccalaureate basic degree, diploma, and associate degree programs, was developed under the direction of the NLN Test Construction Unit.

CONSTRUCTION OF THE TEST

The project directors and faculty members from the participating institutions and experts in disaster preparedness, civil defense, and mass casualty care (including one physician) prepared the over-all plan for the test and the test items. The plan provided for the testing of knowledge of disaster nursing content and its application in natural and man-made disasters. Test items were built around the situation-approach method. Because disaster nursing involves the transfer and application of knowledge gained in a variety of everyday nursing situations to situations that might be encountered in a disaster, the test was designed for use late in the senior year.

On the basis of this plan, a review draft, which consisted of 226 items, was prepared. This draft was sent for review to 187 faculties of educational units offering programs in nursing (basic baccalaureate - 38, diploma or associate degree - 149). These educational units were selected on the basis of information gathered from the 1958 questionnaire survey on the teaching of disaster nursing described in the section "Current Status of Disaster Nursing Preparation." Those selected met three criteria: (1) their programs were accredited; (2) they had indicated that they were providing instruction in disaster nursing; and (3) they had at least one faculty member who had had a course or experience in disaster nursing.

The review draft served as a basis for preparing the experimental form of the test. To obtain item analysis data and initial norms for the test, the experimental form,consisting of 190 items,was administered in the summer of 1960 to 3,000 senior students nearing graduation from accredited basic baccalaureate, diploma, and associate degree programs that met the criteria established for review of the draft.

The final form of the test, consisting of 148 items, was constructed on the basis of the item analysis data obtained from the administration of the experimental form.

DESCRIPTION OF THE TEST

Types of Questions

The 148 questions in this test fall into four major groupings: (1) questions applicable to nursing in any type of disaster (11 questions); (2) questions relating to three natural disaster situations (33 questions); (3) questions relating primarily to enemy-caused disasters (37 questions); and

(4) questions relating to a specific enemy-caused thermonuclear disaster situation (67 questions).

The following questions are representative of those included in the test:

1. If a number of families with small children are together in a shelter, which one of these factors is likely to exert the greatest influence on the reaction of a preschool child to a disaster?
    1. The opportunity for play activities.
    2. The response of other children in the same age group.
    3. The presence of injuries among the victims.
    4. The behavior of the child's parents.

2. Unopened glass containers of I.V. fluids have been contaminated by radioactive fallout. Which way of treating them is best?
    1. By emptying the flasks, boiling the contents, and then considering the fluids usable.
    2. By boiling the flasks and then considering them safe.
    3. By emptying the flasks into prepared sterile containers.
    4. By washing off the flasks and then considering them safe for use.

3. In applying the principle of "the greatest good for the greatest number," which one of these patients in the 200-bed Civil Defense Emergency Hospital would have the lowest priority for care?
    1. A patient who is recovering from anesthesia and is vomiting.
    2. A patient with postoperative urinary retention.
    3. A patient with a cast on the lower leg which is impairing circulation.
    4. A patient with third degree burns of 30% of the body surface, who has anuria.

Scoring

In addition to a total score, two subscores are provided: (1) a subscore on general nursing knowledge applicable to disaster situations (90 questions) and (2) a subscore on facts and principles peculiar to disasters and disaster nursing (58 questions).

The scores are computed on the basis of two norms groups, one consisting of senior students in accredited diploma programs, the other of senior students in accredited baccalaureate degree programs. The size and mean scores of these norms groups and the coefficient of reliability as measured by the Kuder-Richardson Formula #20 are shown in Table 1.

Use and Availability

This test was designed for use in the latter part of the senior year in the nursing program. Therefore, it is suitable for use in testing graduate nurses. However, there are no norms available for this group.

This test is made available to schools and to nursing services from the NLN Evaluation Unit.

Table 1. Means of Norms Groups on the Disaster Nursing Achievement Test and Reliability of the Test

Test	Number of Items	3264 Senior Students			2992 Senior Students in Accredited Diploma Programs			272 Senior Students in Accredited Baccalaureate Degree Programs		
		Mean	S.D.	Reliability Coefficient	Mean	S.D.	Reliability Coefficient	Mean	S.D.	Reliability Coefficient
Disaster Nursing	148	78.9	12.8	0.78	78.3	12.8	0.78	85.2	12.0	0.76
A. General Nursing Applied to Disasters	90	49.2	8.1	0.67	48.9	8.1	0.67	52.5	7.6	0.63
B. Disaster Nursing and Disasters	58	29.6	5.9	0.60	29.4	5.9	0.59	32.7	5.7	0.57

STUDY OF STUDENTS WITH AND WITHOUT DISASTER NURSING INSTRUCTION

A study was undertaken to compare students in educational programs that offer formal instruction in disaster nursing with students in programs that do not offer formal instruction with respect to their performance on the NLN Achievement Test in Disaster Nursing. The specific purposes of the study were to determine:

1. The degree to which students who have not had formal preparation in disaster nursing can apply general nursing knowledge in disaster situations.

2. The degree to which students without formal preparation in disaster nursing have acquired knowledge of facts and principles peculiar to disaster nursing.

3. The correlation between the achievement of those who have had disaster nursing instruction and the achievement of those who have not received formal disaster nursing instruction.

Selection of Students

Information gained from the 1958 questionnaire survey was utilized in the selection of programs whose students would be suitable for the "uninstructed" group. Programs were considered only if: (1) they were accredited; (2) they had reported that they were not teaching disaster nursing; and (3) they had reported that no faculty member had had disaster nursing experience or had attended a course, conference, or institute in disaster nursing or related subjects of mass casualty care. The number of schools meeting these criteria as of 1958 was very small--21. In 1961, each of these schools was asked: (1) if it was offering disaster nursing instruction; (2) if a faculty member had had disaster experience or attended a course or institute; and (3) if it was willing to participate in the study. Only 15 schools met these criteria in 1961. Since only 2 of these offered a baccalaureate basic degree program, and since the data collected from only 2 programs would not be reliable, the students from the 13 diploma schools were chosen for the testing. These "uninstructed" students were designated as Group I.

The Group II, or "instructed" students, were from 13 accredited diploma schools, in which they had received disaster nursing instruction in which there was at least one faculty member who had had preparation by attendance at courses. The schools were paired as to type of control, size, and location.

The test was administered to the students in these 26 schools in the early summer of 1961. Because the number of students being tested was small, and a significance test was indicated, a "t" ratio test was done on all the pairs of schools. The testing involved three scores: (1) scores for general nursing knowledge that could be transferred to and applied in disaster situations, which were derived from 60 percent of the questions; (2) scores for civil defense and disaster nursing knowledge, which were derived from 40 percent of the questions; and (3) a total score representing the sum of the two subscores.

General Nursing Scores

The findings with respect to the scores on the general nursing items are shown in Table 2. In ten of the pairs of schools, there was no significant difference between the scores for Group I students and those for Group II students. Apparently, students in both groups were readily able to transfer knowledge of the practice of nursing in the everyday setting to that demanded in disaster situations. For the other three pairs, the difference was significant, since in fewer than 5 out of 100 instances would these differences have been produced by chance alone.

Table 2. Performance of Group I (Uninstructed) and Group II (Instructed) Students on General Nursing Items

Pair No.	Group I		Group II		df	"t" Values
	Means	N	Means	N		
1	45	41	54	26	65	4.09*
2	50	47	52	32	77	2.11*
3	53	7	62	9	14	1.77
4	48	22	51	20	40	1.15
5	48	23	51	15	36	1.66
6	48	26	53	40	64	1.85
7	51	27	50	18	43	.50
8	47	20	51	40	58	2.33*
9	52	16	55	10	24	1.23
10	50	26	51	26	50	1.08
11	46	17	47	15	30	.37
12	49	13	57	13	24	1.18
13	52	28	50	29	55	1.76

*Significant at .05 level

Disaster Nursing Scores

The findings with respect to the scores on the disaster nursing items are shown in Table 3. The difference in the means for one paired group was zero. In five other pairs, the difference in scores was not significant. In seven of the paired groups, the difference was significant, since it could have occurred by chance alone in less than 5 out of 100 instances.

Table 3. Performance of Group I (Uninstructed) and Group II (Instructed) Students on Disaster Nursing Items

Pair No.	Group I		Group II		df	"t" Values
	Means	N	Means	N		
1	25	41	32	26	65	5.51*
2	29	47	33	32	77	4.08*
3	34	7	38	9	14	1.39
4	29	22	34	20	40	2.74*
5	29	23	31	15	36	1.32
6	27	26	31	40	64	1.85
7	27	27	31	18	43	3.07*
8	27	20	34	40	58	3.41*
9	28	16	36	10	24	6.42*
10	29	26	31	26	50	1.98
11	27	17	28	15	30	.84
12	27	13	37	13	24	2.27*
13	30	28	30	29	55	0

*Significant at .05 level

Total Scores

In eight paired groups, no significant difference was found between the means of the total scores made by those who had received disaster nursing instruction and the means of the scores made by those who had not received this instruction (Table 4). Of course, the fact that the scores of the two groups were fairly comparable with respect to general nursing knowledge had a bearing on these findings.

Table 4. Performance of Group I (Uninstructed) and Group II (Instructed) Students on Total NLN Achievement Test in Disaster Nursing

Pair No.	Group I		Group II		df	"t" Values
	Means	N	Means	N		
1	70	41	85	26	65	5.43*
2	78	47	85	32	77	2.89*
3	88	7	100	9	14	1.90
4	80	22	82	20	40	.64
5	78	23	82	15	36	1.30
6	75	26	84	40	64	3.57*
7	78	27	81	18	43	1.03
8	74	20	85	40	58	2.82*
9	80	16	91	10	24	3.10*
10	79	26	83	26	50	1.68
11	73	17	75	15	30	.58
12	75	13	94	13	24	1.77
13	83	28	80	29	55	1.11

*Significant at .05 level

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